SIGNET•451-E9500•$2.95

THE SIGNET HANDBOOK OF

Parapsychology

FROM ESP TO
OUT-OF-THE-BODY
EXPERIENCES—
TOTAL GUIDE
THE
EDIBLE
D OF THE
ANORMAL

EDITED BY

MARTIN EBON

20541

133
EBO

K. P. Bhat. B'lore. no
22/7/81

THE EXPERTS SPEAK OUT ON PARAPSYCHOLOGY

Parapsychology—the study of psychic phenomena—has long been under attack by the scientific community. Yet, in spite of this, interest in the paranormal has continued to grow and specialists in many of the other disciplines have begun serious investigations into every aspect of the paranormal from mental telepathy to reincarnation. Now, at last, THE SIGNET HANDBOOK OF PARAPSYCHOLOGY brings together the writings of 34 top authorities to present the definitive look at parapsychology and provide an incontestable case for the existence of psi powers and paranormal experiences.

ಅ. ರಂ. ಶ್ರೀ ಪ್ರತಿಷ್ಠಾನ
ಗ್ರಂಥಾಲಯ
೨೦೫೪೧
20541
ಬೆಂಗಳೂರು-19

SIGNET Books of Special Interest

☐ **PROPHECY IN OUR TIME by Martin Ebon.** A leading para
psychologist presents the most striking instances of precog
nition recorded in the twentieth century, involving Cayce
Hitler, the Titanic, Freud, Jung, Jeane Dixon, and man
others. (#E9036—$1.75)

☐ **TRUE EXPERIENCES IN PROPHECY edited by Martin Ebor**
Intriguing case histories of people who looked into th
future to foresee events as they would happen. Collecte
and documented by leading authorities in the field of psy
chic phenomena. (#W8675—$1.50)

☐ **TEST YOUR ESP edited by Martin Ebon.** Now you can tes
your ESP capacity right in your own home. The contributor
to this unique volume, mainly staff members of the Institut
for Parapsychology at Durham, N.C., tell you in simple term
how to set up tests for clairvoyance, telepathy, precognition
and general ESP. (#Y7854—$1.25

☐ **REINCARNATION IN THE TWENTIETH CENTURY edited b**
Martin Ebon. Revised Edition. In this startling book abou
one of the most fascinating and controversial subjects o
the century, a noted scholar has assembled the compellin
testimony of those who claim to remember former lives.
(#W8479—$1.50)*

☐ **LOST SURVIVORS OF THE DELUGE by Gerd Von Hassle**
translated by Martin Ebon. Riddles of the past are answere
in a provocative study that presents indisputable evidenc
that the prehistoric New World was "civilized" by Noah an
his descendants after their own homeland was destroyed i
the Flood. (#E8365—$1.75)*

* Price slightly higher in Canada

Buy them at your local bookstore or use this convenient coupon for ordering.

THE NEW AMERICAN LIBRARY, INC.,
P.O. Box 999, Bergenfield, New Jersey 07621

Please send me the SIGNET BOOKS I have checked above. I am enclosing $__________ (please add 50¢ to this order to cover postage and handling). Send check or money order—no cash or C.O.D.'s. Prices and numbers are subject to change without notice.

Name ______________________________

Address ______________________________

City______________ State__________ Zip Code__________

Allow 4-6 weeks for delivery.
This offer is subject to withdrawal without notice.

THE SIGNET HANDBOOK OF PARAPSYCHOLOGY

Edited by Martin Ebon

ಬಿ. ಎಂ. ಶ್ರೀ ಪ್ರತಿಷ್ಠಾನ ★ ಬೆಂಗಳೂರು-19 ★
ಗ್ರಂಥಾಲಯ
[illegible]
20591

A SIGNET BOOK
NEW AMERICAN LIBRARY
TIMES MIRROR

133
EBO
eg 2664

NAL BOOKS ARE AVAILABLE AT QUANTITY DISCOUNTS
WHEN USED TO PROMOTE PRODUCTS OR SERVICES. FOR
INFORMATION PLEASE WRITE TO PREMIUM MARKETING DIVISION,
THE NEW AMERICAN LIBRARY, INC., 1633 BROADWAY,
NEW YORK, NEW YORK 10019.

COPYRIGHT © 1978 BY LOMBARD ASSOCIATES, INC.

All rights reserved

Acknowledgments

The editor is particularly indebted to the American Society fo Psychical Research, New York, and the Society for Psychical Research, London, for permissions to reprint material from thei publications; sources are cited at the outset of each paper. Th same procedure has been used with material reprinted from othe books and periodicals, by incorporating notices of copyright int the introductory paragraphs that precede republished texts. A special note of thanks is due the editors of the *Journal of Parapsychology,* published by the Foundation for Research on the Natur of Man, who have been generous in granting permission to reprin from the pages of their journal.

SIGNET TRADEMARK REG. U.S. PAT. OFF. AND FOREIGN COUNTRIES
REGISTERED TRADEMARK—MARCA REGISTRADA
HECHO EN CHICAGO, U.S.A.

SIGNET, SIGNET CLASSICS, MENTOR, PLUME, MERIDIAN AND NA
BOOKS *are published by The New American Library, Inc.,*
1633 Broadway, New York, New York 10019

FIRST SIGNET PRINTING, DECEMBER, 1978

3 4 5 6 7 8 9 10 11

PRINTED IN THE UNITED STATES OF AMERICA

CONTENTS

Introduction 1

I. Historical Reviews 5

A Century of Parapsychology
J. B. Rhine.. 7

History of Parapsychology *Martin Ebon* 17

II. Psychotherapy and Parapsychology.......... 41

"Upon the Knees of the Gods"
William James 43

Psychiatric Insights into Psi
Jule Eisenbud 54

Mother-Child Symbiosis: Cradle of ESP
Jan Ehrenwald 66

The Interface Between Parapsychology and
Humanistic Psychology *Stanley Krippner* 79

The Psychic World of C. G. Jung
Aniela Jaffé 88

The Psychological Foundations of Belief
in Spirits *C. G. Jung*.................101

The "Laying on of Hands" *Bernard Grad* 118

III. Religion and Parapsychology...............141

Psychical Research and Theology
W. R. Matthews...143

Faith and Science *William V. Rauscher* 160

IV. Biology and Parapsychology................171

Out-of-the-Body Experiences:
A Psychophysiological Study
Charles T. Tart..173

Psi and Animal Behavior:
A Survey *Robert Lyle Morris*..........201

The Study of Cases of Psi
Trailing in Animals
J. B. Rhine and Sara R. Feathers...........223

The Homing Problem in Pigeons
J. Gaither Pratt..244

V. Survival after Death.......................271
Phantasms of the Dead *F. W. H. Myers*..273
Deathbed Observations by
Physicians and Nurses
Karlis Osis and Erlendur Haraldsson.......286
Reincarnation Research: Method and
Interpretation *C. T. K. Chari*...........313

VI. Consciousness and Parapsychology..........325
Hypnosis and Object Association
W. G. Roll...........................327
Personality Differences in the Effective
Use of ESP *Gertrude R. Schmeidler*.....354
Poltergeist Phenomena and Psychokinesis
A. R. G. Owen..........................365
Testing for Executive ESP
E. Douglas Dean and John Mihalasky.......379

VII. Dreams and Parapsychology.................391
Telepathy and Precognition in Dreams
Martin Ebon 393
Experimental Dream Studies
Montague Ullman and Stanley Krippner.....409

VIII. Parapsychology and Science...............423
An Experimentally Testable Model for
Spontaneous Extrasensory Perception
Rex G. Stanford........................425
Parapsychology in the Soviet Union
W. P. Zinchenko, A. N. Leontiev,
B. M. Lomov, and A. R. Luria...........452
Remote Viewing: New Research Frontier
Harold E. Puthoff and Russell Targ........466
Has Science Developed the Competence
to Confront Claims of the Paranormal?
Charles Honorton 483

Glossary of Terms...............................509
Additional Reading 51
About the Editor................................519

907857
20541

INTRODUCTION

The scientific study of psychic phenomena, for which the term "parapsychology" is now widely accepted, is currently concentrated in the United States. Scholars at a number of institutes of higher learning today devote a considerable part of their time to subjects within this area of inquiry. Nevertheless, parapsychology remains controversial to the scientific community as well as to the general public. This is largely due to an emotional ambivalence with which the phenomena under study are often met; thus, fascination and rejection, attraction and scorn can at times be simultaneously encountered—not only within one group, but even within the same individual.

Parapsychology has long sought to free itself of magical associations, of too close a relationship with spiritualistic and occult traditions. Parapsychologists see themselves engaged in a two-front effort, against occultist intrusions, as well as scholarly resistance to parapsychology's claims. In addition, there are, within the community of parapsychologists itself, the same differences of views to be found in virtually every group of scientists; these include differing definitions of terms (including the range and limits of parapsychology itself), experimental standards, or the exchange and utilization of data. Some recent courses using the term "parapsychology" in their descriptive titles have included subjects like astrology and witchcraft; such associations are frowned upon by professional parapsychologists. On the other hand, novel techniques in healing, with or without religious connotations, have clearly overlapped into parapsychology. This area is explored by Dr. Bernard Grad, in this volume, as he deals with experiments in the "laying-on of hands."

Dr. Grad and his work are typical of the personalities and data presented in this volume. In line with emphasis in the editor's own contribution, "History of Parapsychology," an effort has been made to match individual scholars and their personal interests with papers on subject matter in which they have unique expertise. Unfortunately, space limitations have made it impossible to include contributions by all those whose names have, in the past and present, been closely associated with psychical research and parapsychology. This is particularly regrettable in the case of Dr. Gardner Murphy, the noted psychologist whose work and personality bridged the generation represented by William James and currently active parapsychologists.

On the other hand, Dr. J. B. Rhine's historical survey, "A Century of Parapsychology," and the paper on animal ESP (written jointly with his daughter, Dr. Sara Feathers) provide the reader with insight into Rhine's distinctive contributions to the field. Two papers touching on the work of C. G. Jung, his early study of spiritualism and an appraisal of his concepts by Mrs. Aniela Jaffé, provide an overview of Jung's ideas. It was, however, not possible to include equivalent material concerning the work of Sigmund Freud; the contributions by Drs. Jan Ehrenwald and Jule Eisenbud partly fill this gap. In the field of reincarnation, Dr. Ian Stevenson is indisputably the best-known authority; yet, a contribution by Dr. C. T. K. Chari is used in this volume to provide an overview of study methods in the field. And, although Dr. J. Gaither Pratt is represented with his now-classic study on the homing skills of pigeons, his lifetime in parapsychology has yielded such a variety of papers that their collection would fill several volumes. Among other subjects, Pratt has investigated parapsychology in the Soviet Union and other eastern European countries; this volume contains an authoritative treatment of the subject by four Soviet psychologists.

And so, down the line, selections had to be made to provide the reader with an introduction to a segment of parapsychological studies, with emphasis on each scholar's specialty and expertise. Thus, Robert Lyle Morris's paper on animal experiments is the outgrowth of years of personal fascination with animal behavior. Dr. Charles T. Tart has done pioneer work on out-of-the-body experiences (OBE); Dr. A. R. G. Owen's poltergeist studies are without peer; and the dream telepathy experiments of Dr. Montague Ullman are unique in their combination of quantitative and qualitative results. Dr. Stanley Krippner is a one-man bridge between humanistic psychology and parapsychology, and his paper in this volume reflects this personal role.

Although the paper on "Research on the Hypothesis of Post-Mortem Survival" is an anonymous report by the American Society for Psychical Research, it is based on work conducted by Dr. Karlis Osis, the Society's long-time director of research. Mr. E. Douglas Dean has pioneered the study of extrasensory perception—notably precognition—among high-level business executives. W. G. Roll, as project director of the Psychical Research Foundation, specialized in after-death studies.

The concluding section of this volume contains a detailed paper by Dr. Rex G. Stanford, which can be read as perhaps the most up-to-date and sophisticated analysis concerning modern laboratory techniques in parapsychology. It is followed by a paper on "remote viewing" by Dr. Harold E. Puthoff and Mr. Russell Targ, of the Stanford Research Institute, which has formed the basis of much discussion and of several experiments designed to replicate this work. Charles Honorton's paper, a challenge to science, was delivered while he served as president of the Parapsychological Association. This association is a grouping of professional parapsychologists in the United States and abroad; an anthology fully representative of the field would have a list of contributors almost equivalent to the association's membership. The *Proceedings* of the Parapsychological Association can be used for further readings, and the Bibliography appended to this volume may serve as a guide to other source material.

The editor thanks the contributors to this volume, as well as those who have given him valuable advice concerning potential selections. The present selection is, of course, the editor's own responsibility.

—*M.E.*

203|80
20541

I.

HISTORICAL REVIEWS

૭૦૪૮૧
૨૦૫૪૧

[illegible]
20541

A CENTURY OF PARAPSYCHOLOGY

J. B. Rhine

Dr. J. B. Rhine is unquestionably the leading figure in modern parapsychology. For decades, until his retirement in 1965, he was Director of the Parapsychology Laboratory at Duke University, Durham, North Carolina. Since then, he has directed the Foundation for Research on the Nature of Man, which incorporates the Institute for Parapsychology, also in Durham. His introduction to this volume, "A Century of Parapsychology," has been adapted from an article entitled "How to Cope with a Mystery," contained in the Encyclopedia of the Unexplained, *published in Great Britain by Routledge and Kegan Paul, and in the United States by McGraw-Hill Book Company. Copyright (c) by Rainbird Reference Books Ltd. Used by permission.*

We can now look back upon over a century of experimental parapsychology begun in 1876. This branch of study emerged from the closing quarter of the nineteenth century, a time when men sought to confront the onslaught of the natural sciences on religion by marshalling in its defense the forces of a new kind of science. Parapsychology has come a long way since then. It has had to recast some of its problems for better clarity, to develop new techniques of experimentation, and even to modify its own original point of approach because available scientific methods proved to be unequal to the initial program. It has encountered resistance from the other sciences which had completely surrendered to physical determinism. At the same time parapsychology has needed to remain cautiously alert to the unverified claims of occultism in its many forms and fads, in order to keep the doors always open on its own expanding and advancing frontier.

What now about the way in which such a field is to be approached? Whoever plans to explore the challenging claims of parapsychology, whether just to study what is known or to add to it, should know his own mind unusually well—for example, how firmly he is set on doing it and why. Many people, some of them his best friends, may think him foolish and may try to dissuade him from the venture. It should help both sides of the argument to be able to discuss all the differences in viewpoints on the issues.

I recall a helpful experience I had in 1927 when I was pressed in a friendly way (by a mature professor of psychology at Princeton) not to go into parapsychology. He generously offered me a college position if I would change my mind, and asked me, on seeing that I was persisting, to agree never to publish any of my reports. I was impressed by his concern and I agreed with him to follow certain extremely stringent precautions before I would publish (and I met them in my first major report in 1934). He himself had caught mediums in fraudulent practices and knew some of the dangers that awaited my inexperience. Even though I was not persuaded to give up my plans, I think I was the better guarded for having his advice. There is no need to win over those who oppose you. It is often impossible; the Princeton professor did not accept my later findings, even though he could not see the error he was so certain was there.

The story of the professor will also illustrate my own persistent interest. The pressures were all strongly against my course of giving up an established field of science and venturing into so disreputable an area as psychical research was in 1927. In such a case, whatever the field, you must in all decency and common sense consider the risks and the consequences to those who depend on you and those who have helped you to acquire your status. Fortunately, my wife was a scientist also, and we were in complete harmony in taking this radical step. We had to think also of the lack of job opportunities in the new territory, and in fact there were hardly any then. There was no sure future ahead, even with ful success in the new and uncertain branch. We knew, too, tha a return to the old position left behind was unthinkable. We would have become identified as "adventurers."

But we had studied the field into which we were stepping the risk was at least an enlightened one. Also, the path we proposed to follow had been pioneered by many scholarly people we had come to respect. As we carefully surveyed the grounds for taking up the challenge of parapsychology, we were most heavily influenced by William McDougall's *Body and Mind,* a book which brilliantly portrayed the key role of parapsychology in the understanding of man's nature. Since this branch of research was so important, we felt quite willing to run the added risk; it was, in fact, inspiring to think that we ourselves might help a little to strengthen the case for the existence of the mind as McDougall had pictured it. There was thus a strong sense of mission about our decision as well as the stir of intellectual adventure.

Was that good or bad? I think it could be either; when a person attacks one of these mysteries with an overly fanatic fervor he is liable to risk too much, to be less than objective, and to make reckless decisions. On the other hand, if you entirely lack any such zeal you may not be able to sustain the long pull of patient effort that is usually needed. Some of these initial enthusiasms about an unknown are cases of sheer curiosity, occasioned perhaps by a local incident such as a report of a "flying saucer," or an impressive horoscope, or a poltergeist case. Such natural curiosity is good. It is an important human gift, too often suppressed in most of us as we are made timid and conservative by the over-disciplining of the questioning mind. On the other hand, interest in one of these queer occurrences or a theory of it needs the support of some intelligent appreciation of what the question means. This is necessary before launching an ambitious investigation.

The best first move, of course, is the study of what is already known on the chosen topic. It is one good way to test the depth and stability of your own interest before you go too far. It is considered a necessary safeguard in all the sciences to cover the literature on the subject as thoroughly as possible before beginning a new research project. . . .

Most pioneer explorers who "survive" do so by building a team around the project, and with enough success this group grows into a permanent research center or institute. In time, and it may be a long time, this center may become a part of a university, and even a permanent department, or it may be asked to join a hospital or other institution. At first, the explorer has to support himself while limiting his research to a part-time effort or avocation.

It may be surprising to learn that most of the more revolutionary developments of science have been made outside the universities, as well as without financial aid, and for a long time without recognition. In the United States the great cultural vogue of philanthropy has been the savior of many a inquiry that would have been unsuccessful without such help The practice, a bright jewel of capitalism, is slowly spreadin to Western Europe. The societies for psychical research hav relied mainly on membership dues, but the American societ is now benefiting from personal philanthropy. Nonetheless we see that if you go off into the outer zone of mysteries venturing beyond the close-in problems of university science you had better count on making your own way unless yo luckily discover a supporting donor or philanthropic foundation. Eventually you may be successful enough to be "invite into the academic compound."

. . . Of the subjects touched by parapsychology, that c mediumship is one that did not hold up well enough to survive long on the university campus. Several American universities (Harvard, Clark, Stanford, and Duke) grappled with i partly under the stimulus of grants of money, but the problem was too slow in adapting to the requirements set by th more advanced sciences of easy and dependable demonstration. Psychology itself was having a hard time doing s Later, however, at Duke the choice of a more easily teste claim, that of extrasensory perception (ESP), led to greate and more persistent success and gained a longer tenure on th university campus; again, too, there was the ever-essential f nancial aid from philanthropy.

If you have an independent mind and you plan to identif yourself with one of these unexplained subjects, you need no wait for the approval of anyone. The same is true even if yo wish, as I have done with parapsychology, to devote you main energies to its exploration, to make a career of it. But hope it is also clear that there are other aspects to the matte which should be considered carefully. You need to know tha most of the topics are risky and that hasty, credulous accep ance of some of them could distort your outlook on life an seriously endanger a career.

No one, however, need swallow any of these ideas uncrit cally. There is absolutely no necessity to decide at all abou any of them until you are ready in your own good time. Th is your safeguard against all claims, here and elsewhere— good strong "fence on the edge of the cliff. . . ."

Exposed as most of you are in these times of free circul tion of sensational claims, and social pressures to join grou that follow various mysterious practices, you will want to b able to compare the claims and strange notions of one cu and another. Whether or not you ever join one of them, in rash impulsiveness or through the pull of social contagion, you will at least gather from this volume some of the things you can do to make your choice really your own and really intelligent.

One of the proselytizing cults is Spiritualism. The weird fantasies of Spiritualism gave way in the light of research to the scholarly revelation of another natural (not supernatural) range of communication in man's own nature—his psi (psychic) ability. It is now clear that the Spiritualists had a basis that was valid up to a point; they were, as they claimed, actually at times communicating with a "beyond," a "hereafter," and even performing "miracles" in the sense of superphysical occurrences that transcended the sensory here-and-now. The Spiritualist seances were not all as utterly ridiculous, deceptive or degrading as they have been called. (Although plenty of them were, as I can personally testify.) They have, in fact, conveyed to the world a great message, not from the Summerland, but from science. There really are powers of exchange beyond the senses and muscles, as was implied in Spiritualism. In fact, it was out of the crude exhibitions of mediumship that some of the earliest indications of the psi (psychic or parapsychical) function were sifted. . . . There may be other great mysteries remaining that will in time reveal new worlds to the explorer. What most of the others lack is the promise of the great reward that the claim of spirit survival offered. Along with that was also the apparent demonstration of actual spirit communication through mediums. Many of us could not resist trying to made it soundly scientific if it actually was true. We failed to confirm it, but found instead a great human truth hidden in the cloak of mediumship itself.

The groping branch of psychical research, which down into the 1930s had been largely the study of mediumship and spirit survival, changed almost abruptly to an emphasis on the abilities assumed in mediumship. These are now investigated as an important part of the nature, not just of the medium, but of all mankind. But had there not been the earlier powerful interest in survival, and the promotion of mediumship in serving that interest, the eventual emergence of the psi research era would probably have been indefinitely delayed.

The basic study of parapsychology began, a century ago (as psychical research) . . . to investigate a number of claims; but they all had a central question in common: is there not something nonphysical in man? Mediumship raised the question emphatically. Telepathy was thought to have the same implication. Many other claims, such as clairvoyance and precognition, had a similar bearing. Clairvoyance allowed an even simpler question to start with. Can a person reliably find objects hidden from the senses? With precognition the question was: can an individual predict events ahead of time? These are beautifully clear, basic and simple questions for science, as may be seen by the researches that followed.

The next step is to see if there is any inherent impossibility in the question, any logical "road block." It is like finding out, once the destination is fixed, if there is a possible route or a choice. Some of the routes may look as though they are leading the right way but may be deceptive; or they may have impossible stretches. These are not just idle figures of speech; this is exactly what was found to be the trouble with both mediumship and telepathy. Other questions at this stage have to do with the simplicity of method, relative controllability of conditions. In this competition, clairvoyance came out as the winning choice for an approach to parapsychology and proved its efficiency in years of research. It yielded readily to objective tests (e.g., to the card-guessing techniques that had been used as far back as the 1880s).

This step of testing the logic of the method at the outset is a most elusive one; more people lose their way here than anywhere else in research. It is a serious matter in parapsychology because so many of the traditional problems have turned out to be logically unsolvable at present, but some people have gone right on working blindly as if they were. The trouble has been that conclusive tests cannot be designed at this stage: the questions have arisen faster than the facts and the methods to answer them. This applies to the claims of spirit survival and reincarnation, to the problems of telepathy and retrocognition, to the belief in astral projection, and to a variety of mystical experiences that must be set aside for the present by the researcher who wants to be sure of an all-the-way route to his objective—who wants to know what he is doing.

One more point about this second step is the sheer inefficiency of overlooking it. Probably more than half the work in parapsychology has been wasted for lack of alertness at this point. Take the example of telepathy. During the fifty-year period from 1880 to 1930 the psychical researchers conducted a great many "telepathy" experiments. Some of these took place in the best psychology departments of Europe and America. But no matter how well-conducted or successful those experiments were, not a single case for telepathy could have been made for the entire half century.

Why? In every case the conditions permitted clairvoyance quite as freely as telepathy. Of course the researchers all knew about clairvoyance but they just did not take it seriously. In the Duke work in the early 1930s, the testing of clairvoyance was actually the easiest approach, and ESP was demonstrated quite as easily without allowing the sender to see the target card as when he looked at it.

It is one of the amazing things about scientific research that such blindness affects so many with such serious consequences. Even after it was pointed out that clairvoyance was a possible alternative in every one of the older telepathy experiments, many investigators still continued to disregard the mistake, and they even called their results "telepathy."

It is not just in parapsychology, however, that this happens. If we turn the spotlight on psychology to see, for example, what effect the establishment of ESP has had on the psychologist in his experiments, there is the same disregard. How often ESP has "contaminated" the results of a psychological test, no one knows. Occasionally a case comes to light in which a child is being tested for reading difficulty and is found able to perform much better when his mother is looking over his shoulder at the page. Recently, however, well-controlled experiments have shown that in laboratory experiments under good controls this ESP contamination can occur effectively without any of those involved knowing at the time that it is taking place.

The pay-off for all the preparation and planning is naturally in the testing operation itself. But while careful preparation is the best assurance of a good outcome, there are always variable factors and circumstances that complicate test performance. This is the point at which the advantage of the simplicity of the question under investigation can be appreciated. If any further simplification can be introduced to make the initial step easier, it is usually wise to take it. It can often be done by making the initial project a shorter one, perhaps by restricting the part of the question to be considered in this first step. Small preliminary or pilot projects can often be arranged for the advantageous selection of conditions that will improve the evidential value of the results.

It is most advantageous to have two steps in mind in exploring a new field. The first should be as free as possible in the search for favorable starting points. The precautionary side can well remain secondary at this stage until the sorting out of the easier and best approach has been made. Even then, the beginning experiment with controls should be a pilot effort, made to verify the earlier exploratory tests, with the precautions added; but such a pilot study should not be considered conclusive. It is enough for it to show where and how a conclusive experiment is worth undertaking and the conditions for it. No doubt this two-step method has been used in other exploratory fields, but it has been particularly useful in parapsychology.

The whole aim of the exploratory tests for any mystery is to gain assurance of the efficacy of the method. It is like establishing a beachhead on a new shore. From this beginning point the coverage should be extended by repetitive effort to the point where other investigators are confident enough to follow and confirm. This second step, or independent confirmation, is an extremely important step, too, and in a difficul field it may sometimes take years.

Often in a new field the pilot study is not confirmed in exactly the way it was done first. Exact repetition is not essential, however, if the experiment is otherwise reliably done and the essential point is confirmed. Often, too, a number o experiments may be necessary to produce an adequate confirmation. To some extent the methods need some adaptation to the special problems involved. It helps to study the exploratory stages of other scientific endeavors, since much of wha is learned is transferable from one field to another. Parapsychology, because of its long, slow development and its many stages and branches, offers much to be applied to other unknowns in the behavioral sciences. The histories of hypnosis and psychoanalysis make interesting comparisons and offer some lessons as well.

What is most peculiar to parapsychology is the need a every step to measure abilities that are unconscious and therefore especially difficult for the subject to control fo experimental purposes (or for his own). This unconsciousnes has not only made quantitative assessment complicated, but i has thwarted the experimenter's natural desire to make hi experiments easily repeatable. This easy repeatability remain a likely possibility for a later stage and time, and much progress has been made towards it already. Meanwhile, it ha compelled the use of statistical method to measure test per formance and has made introspective information of limited value. However, it has been helpful to learn that this is the way it is, and to make some progress towards enabling science to enter into this hidden area of the mind, the importance of which one can hope to assess only when it is fully explored.

At this point we are assuming, first, that a clear problem was stated; second, that the way to its solution was logically sound; and third, that it lent itself to a test design that would rule out all possible alternative answers. If so, and if a significantly positive result was obtained from a carefully conducted experiment, it would be said at this point that the question has been answered. Thus the result would add a new fact of scientific knowledge—at least to the experimenter's knowledge. If he then proceeded, as he should, to try to get others to duplicate his experiment and this too was successful, the research finding would be well on its way to becoming a generalizable one for science.

It would be wise, however, for the researcher to wait for a number of confirmation experiments before "rushing into print," and to get repetitions by other scientists, if possible. This may, of course, be hard to arrange if his problem is a very daringly unorthodox one, although that would make it all the more important to do so. It would be best also to keep the project under active investigation with further tightening of all the conditions that have possible safeguarding value. Probably every field of research has known the tragedy of discovering errors too late and having to withdraw once confidently announced achievements. Furthermore, your colleagues may often resent even a normal display of interest in sharing your discoveries with your profession at large. Rather, they prefer a display of caution, to see that there is ample independent confirmation prior to releases. (Everyone inclines to wait for that stage anyhow, before acceptance.) Above all these considerations, however, is the simple fact that the more a good result is shared before announcement is made, the more comfortably it will be accepted and appreciated. In a new or unconventional field, this consideration is most important.

Naturally, every researcher is eager to go on as fast as possible into further stages of his program of discovery. But the further he goes, the more he will appreciate the importance of spreading the base of his research program through added confirmation and supporting researches, even while he builds the structure of accomplishment to still more advanced levels. The crowning achievement of solving a mystery of nature is the eventual discovery of the larger relationships the new findings have to the system of nature already developed by the sciences. But this should be accomplished by building with the principles extracted from the researches themselves rather than with the feeble and tenuous arm of speculative theorization. Just as a good ESP test is one that elicits and measures the ESP process, so a good hypothesis of its nature is one that presents a question in the most effectively testable form. One could add, too, that a good research design is one that will efficiently deliver a clear answer that solves the mystery.

HISTORY OF PARAPSYCHOLOGY

Martin Ebon

The editor of this volume sees the history and current development of parapsychology in terms of a series of personal fascinations and achievements, rather than as the result of some impersonal "forces of history." This paper originally appeared in the volume Psychic Exploration, *edited jointly by Edgar R. Mitchell and John White (G. P. Putnam's Sons, 1974); it is reprinted here with the original publisher's permission. In pointing up the role of pioneer personalities, this historical survey might be read as a guide to the papers that follow; often a researcher's personal orientation—or, indeed, personal experiences—give the impetus to the work he does, and one should not lose sight of the man or woman whose work is studied, no matter how technical and disembodied a given paper may appear to the reader; often a few key sentences contain the point a researcher wishes to establish, and it is up to the reader to select and correctly interpret its ultimate significance.*

Parapsychology is a microcosm of modern science. Its history parallels that of human civilization, particularly that of the West; it also has strong roots in the prehistory of other societies, notably that of ancient China. Just as the natural sciences are indebted to the hopes, methods, delusions, and ambitions of the alchemists and just as modern medicine and psychology are indebted to the skills and ideas of herbalists and shamans, so modern parapsychology builds upon religio-cultural foundations created by earlier civilizations, which, to a degree, continue to exist in contemporary nonindustrial "primitive" societies.

To define parapsychology, to delineate it, to trace its borders, is like kicking an anthill that is covering up a hornets' nest. In today's climate of fashionable trends, there is a temptation to turn parapsychology into an alphabet soup, containing everything from astrology to Zen. And while it would be shortsighted to exclude some of the less respectable tenets, practices, and practitioners simply because they lack prestige, specific lines must nevertheless be drawn and limits established.

The word *parapsychology* was introduced in Germany[4] in the nineteenth century. According to the *Brockhaus Enzyklopädie,* the philosopher-psychologist Max Dessoi (1867–1947) was "critically concerned with occult phenomena and originated the term *parapsychology,* which today is in international use." But as *parapsychology* literally mean "beside psychology," it does not accurately reflect the field o research to which it now applies. Is parapsychology really closer to psychology than, for example, to biology[7] or anthropology? Psychology, conscious of its own inner ferment is certainly not uniformly hospitable to the concepts and methods of parapsychology. Anthropology, theology, physics—these are disciplines that may be counted among the friends and neighbors of parapsychology today.

Similarly, ESP somehow assumes that the perceptions involved are necessarily nonsensory. This prejudges the limit or even the exact number and categories of our senses. If we admit to the limits of our knowledge, we cannot rule out tha certain unexplained phenomena may, in one way or another be nevertheless sensory in nature. But ESP it is called, and that is what we must call it, unless and until a more exac knowledge or terminology is developed. Among terms tha come and go are *parapsychical, metapsychical,* and *parasensory.* In the Soviet Union, the word bio-communication i now frequently used.

One word that parapsychologists totally disdain, regardles of geography or nationality, is *occult.* It is too closely linke with the field's not-quite-respectable antecedents. After all, n shipping tycoon likes to be reminded that his great-grandfather was a pirate. Next to *occult,* the word *superstition* i anathema to modern parapsychologists. Still, much of today' fascination with psychic experiences belongs to a world o wonder and magic that has been with us since mankind's infancy; it reflects, to use a once-fashionable Freudian phrase the individual's "infantile magical thinking." With ful awareness of these historic and all-too-human connotations, visible dividing line must nevertheless be drawn between modern research in parapsychology and some of its antecedents.

Delusions, religious or otherwise; legends of miraculous happenings; and supernatural powers abound through recorded history. Certainly, judging by oral traditions and myths preserved by such means as clay tablets, unrecorded history included practices that later mixed, as well as collided, with Christian concepts. Psi phenomena were recorded in the lives of saints; but while sinners and all other folk presumably experienced them, too, records are scant.

The flow and counterflow of traditions, rituals, practices, and experiences make it impossible to establish specific historic dates for the conscious acknowledgment, study, and exploration of the psychical. Yet as a matter of convenience, such a division should be attempted. The history of parapsychology may be roughly divided into three periods: first, the early period, both prehistoric and historical, a wide and sweeping panorama of phenomena recorded up to the nineteenth century; second, the last decades of the nineteenth century and the first half of the twentieth century; and, third, recent decades.

Of course, these periods overlap. We can find, in both the recent and the fairly distant past, hypotheses, developed and discarded, that anticipated much current thinking. Early studies of psi often followed prevailing fashions in thought and method; but they did not, in many cases, lack sophistication. Attitudes of passionate interest, even in antiquity, did not rule out detachment and skepticism, examination of independent witnesses, allowance for faulty observation, and recognition of the need for repetition. Such objectivity existed, then and now, side by side with the passion of True Believers.

The past, like the present, is often thought of in terms of categories, be they prophecy, incantation, ritual, dialogues with the dead, ancestor worship, visions, miraculous or spiritual healing, sorcery, or any other of an immense variety of religious, pseudoreligious, or profane practices and claims. But, categories aside, much of human history must be viewed in terms of the men and women who either dramatized or explored its events, including psi. No matter how glibly one may speak of historical "periods" and "trends" or how modest some pioneers may wish to be, the decisive role played by individuals in the history of parapsychology must be recognized.

Among the respectably distant names in the history o parapsychology are the Witch of Endor, King Croesus o Lydia, and, interestingly, Aristotle. Linguistics plays havo with historical certainty, and this has happened to the Endo story in the Old Testament (I Sam. 28:3–25). King Saul wa upset and confused when he went to Endor. There, th "witch" was instrumental in bringing back the spirit of Samuel, who denounced Saul's wickedness and prophesied his end According to Tiemeyer[33], the original Hebrew word for th practices of the woman of Endor "can be translated as necromancy, divination, sorcery, prophetic power, magic or fortune telling" because the ancient language "groups all c these in one word." The Witch of Endor, in other words, wa a "medium" who apparently was able to permit spirits of th dead to manifest themselves to the living. In modern parlance, she might be called a *psychic*, a *sensitive*, a *psychi sensitive*, or a *medium*. The reader is free to make his ow choice.

King Croesus was unsure whether he should fight the Persians. With a researcher's skepticism, he first wanted to test th powers of the competing oracles whom he might consult fo advice. He devised a test that would be complex enough t rule out pure guesswork or mediumistic gobbledygook, whic was as rampant then as in more recent days. The Oracle c Delphi alone replied correctly: "Croesus is boiling a lam and a tortoise together, in a copper vessel with a copper lid. When Croesus checked with the Delphic oracle on h planned war against Persia, she said that if he crossed th river Halys, which meant war with the Persians, he woul "destroy a great empire." Croesus interpreted this to mea destruction of the Persian Empire; in fact, it led to th destruction of his own. But then, his tortoise experiment ha tested the oracle on clairvoyance or telepathy, not on precognition.

Aristotle spoke about precognition with a detachment tha has remained standard among objective researchers. H wrote:

> As to divination which takes place in sleep, and is said to be based on dreams, we cannot lightly either dismiss it with contempt or give it implicit confidence. The fact that all persons, or many, suppose

> dreams to possess a special significance, tends to inspire us with belief, based on the testimony of experience; and indeed that divination in dreams should, as regards some subjects, be genuine, is not incredible, for it has a show of reason; from this one might form a like opinion also respecting all other dreams. Yet the fact of our seeing no probable cause to account for such divination tends to inspire us with distrust.

At any rate, cultural patterns in precognition have not changed; to this day, most spontaneous cases of premonition are connected with a subject's dreams.

The Early Period

The impact of Emanuel Swedenborg (1688–1772) was remarkably strong and lasting. This man defies categorization. He was a highly respected authority on metallurgy, he claimed to have spoken with God, and he outlined a detailed concept of universal law, as well as a structure of life beyond death. On June 19, 1759, a fire broke out in the Södermalm section of Stockholm. Swedenborg is reported to have arrived in the city of Göteborg, 300 miles away, that afternoon. At dinner with a party of friends, he reported to them a vision of the burning town. By 8:00 P.M. he is reputed to have told them that the fire had halted three doors from his own home. The next day, a Sunday, the mayor of Göteborg, who had heard of Swedenborg's clairvoyant impressions, discussed the fire with him. The next night, a messenger from Stockholm confirmed that the fire had stopped.

No one can now sort out the various reports dealing with this event. What is beyond doubt is the impact that Swedenborg's visions had on his contemporaries and later writers and thinkers. Broad, in a critical essay on the Stockholm fire[5], noted that "none of these accounts has the least evidential value." He was, of course, viewing the case in retrospect and from the validation standards of the nineteenth and twentieth centuries.

Research scientists, particularly in an area of rich public interest and strong emotional involvement, are peculiarly at the mercy of legend makers. The power of fiction writers should not be underestimated. In our own time, the motion picture has been added to the novel and short story, an these have taken the place of the epics of the past. Thus while Swedenborg's major work, *Arcana Coelestia*, at first interested such philosophers as Kant and, later, artists of th caliber of William Blake and poets of the distinction o William Butler Yeats, such imaginative approaches create certain difficulties to contemporary researchers.

This can be illustrated by reference to a phenomenon tha was for a time closely linked with psychic research, then fe into the background, and has now found a new role withi it: hypnosis. Try as they may, specialists in the field hav found it difficult to overcome the Svengali label. George D Maurier, in his novel *Trilby* (1894), introduced Svengali as "tall and bony character between 30 and 45, well feature but sinister," who managed to put young and innocent Trilb O'Ferrall under his hypnotic spell.

I am introducing this piece of literary trivia because fiction, legend, fear, desire, and wish fulfillment played a stron role in the early history of the psychic. Du Maurier, lik Charles Dickens, reflected the interests of his times. The eb and flow of general, as well as scientific, interest in psi—rea or imagined—reflect the cultural and psychological profile c each historical period. And while we may view accounts c stigmata or reports on levitations of St. Theresa of Avil (1515–1582) or of St. Joseph de Copertino (1603–1663 with a retrospective smile, we must keep in mind that rel gious mysticism has been a decisive part of psychic trad tions.[11]

Whether the miraculous was regarded as white or blac benign or malign, it nevertheless reflected the role of Christ anity in the history of Europe and the United States throug the centuries. The concept of testing the accuracy and validity of reported phenomena emerged gradually over a lon period of time. Henri More, in his *Antidote Against Atheis* (1653, 1655), related a number of events that included a paritions, poltergeist phenomena and possession which he ca egorized as free "from all suspicion of either Fraud c Melancholy." The word *fraud* has not changed meaning 300 years; he used *melancholy* in the sense of a hallucinatio induced by emotional imbalance. He was, in other word quite aware that objective phenomena needed to be separate from fakes and delusions.

More's disciple, Joseph Glanvill (1636–1680), has bee mentioned by Parsons[10] as a forerunner of psychic researc

In particular, he developed a questionnaire on case histories designed to document events that were "near and modern" and "sufficiently fresh" to permit reliable testimony. Glanvill, according to Parsons, sent out questionnaires "about time, place, deed, and doer" and "character testimony was collected to establish the disinterestedness of witnesses"—a method that foreshadowed international verification standards defined in 1955 at the Conference on Spontaneous Phenomena in Cambridge, England.[20] Glanvill had to resist the temptation to be a teller of popular stories. The seventeenth century, still fascinated by witchcraft, moved from more or less objective treatment of alleged events to out-and-out storytelling for the thrill and diversion of the reading public; it is a situation that persists. Glanvill helped to mold the evolving technique of the short story, no matter what his preferences or protestations: "I Know it is Matter of very little Credit to be a Relator of Stories, and I of all Men living, have the least Reason to be fond of the Employment; for I never had any Faculty in telling of a Story, and have always had a particular indisposition and backwardness to the Writing any such."

Much like a circus bareback rider who has one foot on each horse, galloping side by side, Glanvill was at once a collector and verifier of psychic case histories and an early master of the brief and dramatic narrative. Daniel Defoe (1660–1731) and Edgar Allan Poe (1809–1849) were among the prominent writers in this tradition. The early writers told their stories of supernatural events or encounters in order to instruct, to provide contemporary documentation of religious ideas. However, much depended on the mixed motives of the readers, who might well wish to be educated but also to be thrilled, amused, horrified, or entertained. Nineteenth-century materialism, the age of Charles Darwin and Karl Marx, brought about the assertion of objective fact over the subjective and religiomystical. Darwin's *Origin of Species* (1858) symbolized and strengthened the scientific–materialistic concepts of the period, and reaction to it indirectly caused the development of modern psychic research, which began as an effort to synthesize scientific and religious tradition.

The Middle Period

In 1848, two sisters, Margaretta and Catherine Fox, experienced rapping phenomena in their parents' house in Hydesville, New York.[5,31] Attributed to spirits, these rapping soon echoed throughout the United States. Spiritualism became a fad, a pseudoreligion, the focus of sincere belief, a well as after-dinner entertainment. It reached the Whit House, where Mary Todd Lincoln, the President's wife, hel séances at various times. Nelson[17] writes that before this ther had been "no Spiritualism in the modern sense of that term. He notes,

> There were indeed many instances of the occurrence of the phenomena that later became distinctive of Spiritualism before 1848, for such phenomena . . . are a universal element in all human societies, and many groups and individuals throughout history have claimed the ability to communicate with the "dead" or other spirits as part of their religious practices, but there had been no movement in civilized societies entirely based on a belief, and the practice of, regular communication with the dead.

Mesmerism (later known as *hypnosis*) was another precursor of Spiritualism. Franz Anton Mesmer's (1734–1815 concept of "animal magnetism" and his experiments were th rage of the Continent. Reports that entranced persons coul practice such esoteric tasks as receiving thought-borne instructions at a distance were numerous. The mesmeric, o hypnotic, trance bears a close resemblance to the mediumisti trance. Alleged "supernatural" phenomena were shared b mesmerism and Spiritualism, while the Christian traditions o mysticism, often as structured by Swedenborg,[5] provided variety of patterns for mediumistic phenomena. Nelso maintains that the outbreak of the Civil War in the Unite States cut short the rise of Spiritualism. The war diverted attention, disrupted home life, and destroyed Spiritualist organizations. Nelson notes that the established churches develope national organizations during the war, while Spiritualism failed to maintain its early promise because of its failure to develop either organization, ritual, or doctrine.

Great Britain, which had earlier imported American mediums and séance-room methods, now adopted the new Spiritualist rationale. In France,[2] a Spiritualist structure was developed by Allan Kardec (1804–1869), whose books *Le Livre des Esprits* and *Le Livre des Médiums* remain popular to this day, notably in Brazil (where African influence has given Spiritualism an impetus rivaling that of Roman Catholicism). The post-Darwinian dilemma of the British can be personalized in the life and thought of Henry Sidgwick (1838–1900). He belonged to the local ghost society while still an undergraduate at Cambridge University. He attended séances, but his reaction was ambivalent. Still, his concern with human ethics, conduct of behavior, and their roots in Christianity provided him with a strong motivation for extensive thought and research. He later became professor of moral philosophy, but only after a period of personal evolution, which included a slowly developing collaboration with Frederic W. H. Myers (1843–1901). Both were deeply concerned with their own, and man's, ambiguous position in a post-Darwinian world. Gauld, in his history of the personalities in British psychic research,[9] notes that Myers, after a near-fatal illness in 1869, "realised he was no longer a Christian" and then "vacillated between complete agnosticism and a troubled half-belief." To Myers, "the thought of personal extinction was dreadful." He was a brilliant, vain, emotional, ambitious, handsome, and hard-driving man who invited the disdain, as well as the admiration, of his contemporaries and biographers.

Myers and Sidgwick had a deep-delving talk during "a star-light walk [probably on November 13, 1871] which I shall not forget," as Myers put it. The two men began a consistent study of mediumistic phenomena, mainly among their common friends. Gauld notes that until then

> Sidgwick's investigations of Spiritualism and related phenomena had been fitful, waxing and waning as his opinions vacillated; but for much of the rest of his life he was to be constantly prodded into action by the eager and relentless Myers. . . . During the next quarter of a century the Sidgwick group investigated many physical mediums (mediums who seem to act as instruments for the physical

> manifestations of "spirits"); and the same pattern of events was repeated a number of times. Myers would become enthusiastic about such-and-such a medium; Sidgwick and his wife Eleanor would acquiesce far enough to support or participate in an investigation; and everyone would in the end be more or less disappointed.

There was a high-level social touch to these collaboration Sidgwick married Eleanor Balfour in 1876. Gauld observ . . . that this made him the "brother-in-law to a future Prim Minister (Arthur James Balfour, First Earl of Balfou British Prime Minister, 1902–1905); and through his sister marriage to E. W. Benson he was already brother-in-law to future Archbishop of Canterbury. To say that the Sidgwic had friends in high places would be an understatement." S cial prominence can, of course, be a drawback. It may di courage criticism and self-criticism. Moreover, distinction one field, such as literature or public affairs, does not nece sarily make a researcher immune to fraud or self-delusion another, such as psychic research.

The Society for Psychical Research (SPR) was official constituted in London on February 20, 1882. Henry Sidgwi became its first president. Seven years later, in his presidenti address on "The Canons of Evidence in Psychical Researc (31, 6:1–6), Sidgwick referred to the dilemma faced Christians in reevaluating the "marvellous narratives of t Gospels." He noted that the society's research into "the po sible action of intelligences other than those of living hum beings in the world of our experience" had made it the targ of attacks "with equal vigor by Materialists and Spiritualists He called the physical phenomena of Spiritualism "t strangest of the marvels we are investigating." Sidgwick sa that anyone who "is convinced himself of the reality of a alleged marvel" should first try to "diminish the improbabili of the marvel by offering an explanation which harmonizes with other parts of our experience; and second, to increa the improbability on the side of the testimony, by accumula ing experiences and varying conditions and witnesses."

These sentiments were echoed in a characteristically mo poetic manner by Myers in his obituary of Sidgwick (3 15:459–460). He wrote that the society's basis for existen was "the extension of scientific method, of intellectual v tues—of curiosity, candour, care—into regions where many current of old tradition, of heated emotion, even of pseudoscientific prejudice" prevails. He added: "We must recognize that we have more in common with those who may criticise or attack our work with competent diligence than with those who may acclaim and exaggerate it without adding thereto any careful work of their own. We must experiment unweariedly, we must continue to demolish fiction as well as to accumulate truth; we must make no terms with hollow mysticism, any half-conscious deceit."

Myers's psychological insights, his deep motivations and his own considerable diligence contributed to the makings of his monumental work *Human Personality and Its Survival of Bodily Death.*[16] The book, published after Myers's death, remains one of the seminal works in this field. It not only provides a comprehensive survey of the society's work over a period of two decades, but it places psychic research within a wider framework of scientific inquiry that reflects Myers's own wide-ranging interests and perceptions. Its sections on psychology reflect his respect for the ideas of William James (1842–1910), notably his *Principles of Psychology* (1890). It was Myers's alertness to Sigmund Freud's developing concepts of psychoanalysis that prompted Freud to become a member of the Society and to publish in its periodicals. Myers once prompted Henry James, the novelist, to read one of his brother William's reports before the Society.

William James, a commanding figure in the history of twentieth-century psychology,[12,15] assumed the intellectual leadership of the American Society for Psychical Research (ASPR) more or less reluctantly.[16] The American Society had been established in 1885 during a visit to the United States by Sir William Barrett. In 1887, Richard Hodgson came from England to become the Society's executive secretary; it was a branch of the London organization until Hodgson's death in 1905. It was then reestablished, with James H. Hyslop as its secretary and director. Hyslop had resigned his position as professor of logic and ethics at Columbia University in 1902 in order to devote himself fully to psychic research. Lydia W. Allison (1880–1959) said[1] that long and intensive investigation convinced Hyslop that "survival of personality and the possibility of communication was a more reasonable interpretation of the facts he obtained than the alternative telepathic explanation."

This point goes to the heart of a question that is central to the history of psychic studies: Are the data forthcoming from a medium in trance the manifestation of a discarnate perso ality, a spirit,[13] or merely the dramatic presentation of i formation gathered telepathically or clairvoyantly fro persons present or from other living sources? Much of toda emphasis on research in telepathy, clairvoyance, precognitio and other forms of ESP assumes that known scienti methods cannot be applied to research into life after deat mainly because the ESP alternative cannot be eliminate Still, some projects have been designed specifically to scre out ESP. . . .

At any rate, Hyslop undertook a series of experiments wi mediums, notably Mrs. Lenore Piper (1859–1950), th provided the basis for his conclusions concerning postmorte survival and telepathy. Mrs. Piper's mediumship was, f nearly a generation, central to psychic research in the Unit States. (But I must certainly mention, in this connection, t prestige of at least one other medium, Mrs. Gladys Osbor Leonard, whom one researcher, W. Whately Carington, on called "the British Mrs. Piper.") I have noted elsewhere[8] th the investigatory approach of William James was artistic, i tuitive, and subjective, that "striking examples of mediumsh provoked him into reports, analysis and conclusions that co bined daring with caution: the scientist and the artist we struggling for his soul, but neither, we can now say, won t final victory." From his father, the elder Henry Jam William had inherited an interest in Swedenborg's concep to this he added professional psychophysiological knowled He found the Sidgwick circle in London, in late 1882 a early 1883, to his liking. His report to the SPR dealing w Mrs. Piper was presented in 1890. James summarized t Piper phenomena with circumspection. She knew, he sa "things in her trances which she cannot possibly have hea in her waking state, and the definitive nature of her trances yet to be found." He concluded: "The limits of her trance formation, its discontinuity and fitfulness, and its apparent ability to develop beyond a certain point, although they e by rousing one's moral and human impatience with the pl nomenon, yet are, from a scientific point of view, amongst most interesting peculiarities, since where there are lim there are conditions, and the discovery of these is always t beginning of explanation."

Another strong personality in the history of psychic stud is Dr. Walter Franklin Prince (1863–1934), who served research officer of the two societies for psychic research the United States. He joined the ASPR at Hyslop's behest in 1917, having already contributed his monumental study on "The Doris Case of Multiple Personality" (IX and X, pp. 1–1420). The manifestations might easily have been interpreted as successive "possession" of "Doris" by various spirit entities. Prince, however, insightful and cautious, allowed for psychological alternatives, as well as for unknown factors. Prince's writings were precise, and occasionally acerbic; he did not suffer fools or frauds gladly.

Hyslop's death in 1920 brought Dr. William McDougall (1871–1938) to the presidency of the ASPR. Three years later, the Reverend Dean Frederick Edwards became president and replaced Prince as editor of the society's journal. According to Lydia Allison,[1] "Within three years the policy of the Society deviated vastly from the standard established by Professor Hyslop. It was desired to spread the influence of psychical research by popularizing the subject. The Boston members of the Society who had loyally supported Professor Hyslop, and had met for a number of years as a local group, felt they could work to greater advantage as an independent organization." Prince went to Boston and continued his high-quality research.

The ASPR passed through a difficult period, dominated by the fascination of several of its most prominent members with the apparent phenomena displayed by Mrs. Mina Stinson ("Margery") Crandon of Boston. The Crandon case gained international notoriety, as researchers and laymen in the United States and Great Britain and on the Continent took positions for or against the "Margery mediumship." Colorful personalities, including master magician Harry Houdini, used the controversy as a springboard for personal publicity. Charges of fraud were made, rebuffed, renewed, and rebuffed once more.

The ASPR was reorganized in 1941, with Dr. George H. Hyslop, son of James Hyslop, as president. At the same meeting, Dr. Gardner Murphy, who had been on the council of the Boston society since it was established in 1925, was elected an ASPR trustee and chairman of its research committee. The presence of Murphy, a leading psychologist, dramatized yet another element of continuity. He had joined the SPR when he was in London in 1917, as a U.S. soldier on leave; he held a Richard Hodgson Fellowship at Harvard; in the footsteps of William James, he studied the mediumship of

Mrs. Piper. He edited, with Robert O. Ballou, a collection essays, entitled *William James on Psychical Research.*[15]

Characteristically, Murphy's book *The Challenge of Ps chical Research,*[14] written with Laura A. Dale, is dedicated Myers, Sidgwick, and Prince. The cases presented in this vo ume show the shifting in emphasis in psychic subject matte dealing with spontaneous cases (those that occur outside t laboratory or mediumist circles); experimental telepathy, e perimental clairvoyance, precognition, PK, and, finally, su vival after death. Murphy, who served as president of t ASPR from 1966 to 1970, is perhaps best known for h work as director of research at the Menninger Foundation Topeka, Kansas, but he was also president of the Americ Psychological Association in 1944. Contact between psych research societies in Britain and the United States remain close; Murphy was the third American to be president of t SPR (1949), following James (1894–1895) and Prin (1930–1931).

The Recent Period

I said at the outset that the history of parapsychology, li much of history in other fields, is the outgrowth of individu initiatives, motivations, skills, and, one should add, often personal charisma. Sidgwick's serious involvement need Myers's egocentric charm to get psychic research off to a ru ning start. In the United States, two other men were respon ble for the evolution of research in the 1920s, the 1930s, a beyond. They were William McDougall (1871–1938) a Joseph Banks Rhine. McDougall had been a professor of p chology at Oxford; his ideas, expressed in the book *Soc Psychology* (1912), were so novel that, in the words Gardner Murphy,[14] they "swept everything before it."

McDougall left Oxford in 1920 to fill, most appropriate the chair in psychology that had previously been held William James; at the same time, he became president of ASPR. But the Harvard work paled, the ASPR went throu its internal crisis, and McDougall transferred to Duke U versity in Durham, North Carolina, where he became head the Department of Psychology. Rhine has recorded genesis of parapsychological research at Duke,[26] stating th McDougall took over the Duke psychology department 1927. Rhine and his wife, Louisa, then two young biologis came to Duke in September of that year for post-doctoral study under McDougall "of the claims to scientific value of the field known as psychical research." Rhine recalls that they saw McDougall as "the man best prepared at that time to serve as a mentor in the difficult appraisals they had come to make."

The events in Durham during the decades that followed were certainly as crucial to the history of parapsychology as had been the two closing decades of the nineteenth century to the history of psychic research. Rhine and his associates gave an account of this period that calls for relatively extensive quotation:[26]

> The special mission which brought the Rhines to Duke, although it did not measure the entire range of their interest in psychical measures, had to do with the claims of mediumistic communication with discarnate personalities, the question of spirit survival. Even more specifically, they had come laden with a large collection of records of stenographic notes taken at sittings with mediums, with the aim of evaluating this material under the guidance of Professor McDougall. This material belonged to the Assistant Superintendent of Schools of the city of Detroit, Mr. John F. Thomas and it was with his financial support that their visit to Duke was made.
>
> It is of some importance to note that parapsychology came to Duke because of an interest in the problem of postmortem survival, not only on the part of the sponsor, Mr. Thomas, but on the part of the Rhines and Dr. McDougall as well.

This history of the Duke laboratory notes that

> the emphasis given to the studies of mediumship and possible communication with incorporeal [spirit] personalities [may seem] more unusual today to the student of parapsychology than it appeared in 1927. It is important, however, that it was this same "survival" problem that brought parapsychology to scientific attention everywhere. There had, of course, been scattered instances of attention given to other parapsychological claims (for example, in connection with mesmerism or hyp-

> notism), but it was the Spiritualist movement more than anything else that drew scientific interest to the associated claims. As always in the vanguard of scientific progress, here was a strong and widespread human need—in this case, the need to know whether any continuation of personality beyond the grave could be demonstrated.

Rhine, after his first year at Duke, was on the staff of the Department of Psychology, specializing in experiments with telepathy and clairvoyance. The results "were barely encouraging enough to warrant continuing," but there were variou encouraging elements. Test cards, now standard equipment in ESP experiments, were first developed there. The high poin in these tests was reached in 1933, when Rhine undertook distance-telepathy tests that brought in startling results. These were later to be known as the Pearce-Pratt experiments, as the two participants were Herbert Pearce and J. G. Pratt who subsequently worked for some three decades within the Duke laboratory. Over a period of 300 trials, Pearce achieved a total score of about twice the number of hits, or correc guesses, than could be expected by pure chance. Rhine published these and other results in a monograph, *Extra-Sensory Perception*,[23] that created widespread interest, a good deal o controversy, and some hostility toward the ESP experiment within the psychology department of the university.

The Parapsychology Laboratory became a separate unit i 1935. It broadened its range of experiments from telepath and clairvoyance to precognition and psychokinesis. The laboratory began publication of the *Journal of Parapsycholog* in 1937. McDougall, introducing the first issue of this journal, wrote that future research should concentrate on "strictl laboratory studies which most need the atmosphere and conditions to be found only in the universities, and it is thes which the universities can most properly promote, leaving th extra-academic groups the still important task of collectin and recording all such reports of phenomena apparently expressive of unusual mental powers as occur spontaneousl obscure warnings and premonitions, veridical phantasms o the living and the dead and other sporadic manifestations o mysterious origins."

The Duke laboratory results at first occasioned chagrin disbelief, and hostility among psychologists and within othe segments of the scientific community. Some sought to dupl cate the Duke work and were unsuccessful; others, although skeptical, found, at times to their annoyance, that they achieved positive results. One early critic of the Rhine work had been Prof. S. G. Soal of London University. As noted by Pratt,[21] Soal's interest in the field was aroused during the years that followed World War I; he had "experiences with a medium that convinced him of the genuineness of telepathy, but for a long time all his efforts to obtain results in quantitative tests had been unsuccessful." Soal criticized the Rhine work and engaged in a long series of experiments that, at first, seemed to bear out his anticipation of negative results; these experiments, with Gloria Stewart and Basil Shackleton, lasted more than four years and yielded startlingly significant results.

The Rhine work was summarized in 1940 in a collaborative volume, *Extra-Sensory Perception After Sixty Years*,[29] that placed the activity of the Duke laboratory within the framework of historical relationships. As a matter of fact, attempts to harness psi in experiments of the laboratory type had been made throughout the history of organized psychic research. According to *Introduction to Parapsychology*,[19] the Sidgwicks engaged in telepathy experiments whereby Alice Johnson visualized two-digit numbers and "sent" them to the entranced subjects in another room. The experiments were so constructed that the results could be contrasted with chance expectations. The account also recalls the pioneer experiment undertaken at the psychology laboratory of the University of Groningen in the Netherlands in 1921. Drs. H. I. F. W. Heymans and G. Brugmans worked in two rooms, one above the other in the same building, as follows:

> In the lower room sat a blindfolded student inside a black cloth cage with a slit in it. Above were the experimenters, looking down and observing him through a large hole covered with glass. Upstairs, they selected slips of paper from a bag which corresponded to squares on a checkerboard outside the subject's cage. The subject reached out of his cage and knocked on the particular square on the board which, he felt, had been selected. In 187 trials, he was right 60 times; chance would have made him right only 4 times.

The Duke experiments in telepathy, clairvoyance, and pre-

cognition were carried out with the help of specially design
cards, approximately the size of playing cards, using a de
of 5 circles, 5 crosses, 5 wavy lines, 5 squares, and 5 sta
Chance would enable a test subject to guess 5 out of these
cards correctly. Following the Pearce–Pratt experiments, t
Duke laboratory developed a large variety of metho
designed to define and explore the apparent faculties at wo
in the ESP process. Refinement led to additional precautio
The Pratt–Woodruff screened touch matching experimen
conducted in 1939, assured that two experimenters we
present at all times, that duplicate records were kept
locked boxes, and that sheets were serially numbered a
stamped with the laboratory's seal. Rao[22] observes that th
experiment was "one of the most successful experiments pe
formed with several unselected subjects." He comments, "T
interesting point in the experiment is that none of the partic
pants by himself could consciously or unconsciously comm
an error that would produce an artifact. [Joseph] Woodru
did not know the order of the key cards, and Pratt, wh
knew their order, had nothing to do with the target car
Pratt and Woodruff kept independent records of key car
and targets respectively." Thirty-two subjects participated
the test. Out of a total of 2,400 runs, a positive deviation
489 hits was obtained. Rao notes that these results a
equivalent to odds of 1,000,000:1 and thus "cannot reaso
ably be attributed to chance." He adds, "No one could attri
ute such a result to normal causes unless he were willing
accuse the experimenters of deliberate fraud on the groun
that a similar result could not have been obtained otherwise

Accusations of fraud or of the "doctoring" of experiment
results have, in fact, been directed at parapsychologists fro
time to time. Aside from the cruder charges that the expe
menters and subjects must have engaged in a conspiracy, cr
icisms have been directed at such aspects of experimentati
as the statistical evaluations, the gap between original da
and published material, the selection of significant resu
from a much wider body of tests that did not yield su
results, or the possibility of unconscious distortion of da
during recording, tabulation, evaluation, and summarizi
On the whole, parapsychological experimenters, some
whom remember the earlier disillusionment of research
with certain mediumistic subjects, are eminently alert to su
dangers.[24,27,28]

The Pearce–Pratt and Pratt–Woodruff experiments in t

United States, as well as the British experiments with Stewart and Shackleton undertaken by Soal with the cooperation of Mrs. K. M. Goldney, are now, in a sense, classical. Retrospective analyses of these and related tests have led to further refinement of procedures, aimed at more elaborate randomization and control conditions on all experimental levels. These efforts, of course, continue; the need for continuous alertness is being passed on to younger researchers.

Elsewhere, the recent history of parapsychology is also linked with names of leaders in the field. Thus, in Germany, Prof. Hans Bender of Freiburg University directs the Institute for Border Areas of Psychology and Mental Hygiene. In the Netherlands, Prof. W. H. C. Tenhaeff has for many years directed the Parapsychology Institute of the University of Utrecht. In the Soviet Union, Prof. Leonid L. Vasiliev (1891–1966), who had been close to the Western European experimenters in the 1920s, was instrumental in reviving research in the Soviet Union through the physiology department of Leningrad University in the 1960s. In France, the Institute Métapsychique International in Paris has long been the center of psychic research activities. Parapsychology centers have also been active in Italy, various Latin American nations, and Japan. On the initiative of Rao, who spent several years at the Duke laboratory, a parapsychology laboratory was established at Andhra University, Andhra State, India.

While it is often assumed that there has been a substantial increase in university studies in the field of parapsychology, the pattern has actually been more of work done by individual researchers within universities or by groups or institutions affiliated in various ways with a university. The University of Virginia established a Division of Parapsychology in 1967 under the direction of Dr. Ian Stevenson, whose research in cases suggestive of reincarnation is illustrative of specializations associated with individual scholars. Thus, Dr. Gertrude Schmeidler of the psychology department at the College of the City of New York has for several decades explored correlations between attitudes and ESP scoring. Dr. Charles Tart of University of California at Davis has done a series of experiments with apparent out-of-the-body phenomena. These and others whose work is described elsewhere in this volume illustrate the diversity that characterizes past and present research avenues and methods.

Diversity, while in many ways adding to fermentation in the field of parapsychology, has not been without its problems. Historically, a great deal of naïveté and charlatanis could be observed, at times involving researchers with clai to considerable distinction in other areas of work. To th day, claims and counterclaims concerning the Margery me umship may still be heard. And the relationship between S William Crookes and the young medium Florrie Cook is o of those Victorian tales that mix science with titillating goss that makes for a certain type of history. Myers, too, was su ject to similar retroactive evaluation of his many-sided e deavors. But beyond sheer anecdote, it certainly cannot denied that parapsycholgy—as Myers said in his obituary Sidgwick—at times may need more defense from its so-call friends than from objective critics. Above all, public inter has been a two-edged sword. While Rhine's work in the ea 1930s probably gained from the favorable publicity it r ceived, it also focused a strong spotlight on what was still relatively young investigative technique, and it also arous the jealousy of others.

Today, we find Rhine concerned about the need to redefi parapsychology and guard against intrusions or scattered tention. He wrote:[25]

> Perhaps mesmerism and spiritualism could be said to have done for the 19th-century beginnings of parapsychology what might be held up as a possible danger today. These and a number of related movements such as Theosophy and Christian Science were founded on assumptions that since have come to be regarded as basic elements in parapsychology. There was a long period of struggle over whether science could extract and liberate these principles from the institutions to which they had become so essential. Gradually, however, the parapsychical elements were pulled away from mesmerism and hypnosis, and later psychical research achieved its independence of the spiritualist movement.

Speaking, as it were, from the position of an elder stat man of parapsychology, Rhine noted that most workers in t field "would consider it unthinkable that parapsycholo could be completely captured now by any alien ideology discipline," but he suggests that present trends might reta progress in parapsychology, throw it off course, or set it ba if it should lose, even temporarily, "the guiding concepts a standards that have given it so promising a start." Specifically, Rhine cited "Kirlian photography" as one of the developments that "as of now is nothing on which to get side-tracked." He warned of "confusion over astrology" and spoke of claims that plants respond to human thoughts and "can react intelligently on a polygraph" as still lacking in "scientific findings to justify the claim." Rhine felt that the Parapsychological Association and some of its leading members failed to screen such claims adequately. The association, established in 1957 and admitted to membership in the American Association for the Advancement of Science (AAAS) in 1969, functions as the professional organization of parapsychologists in the United States and abroad. It holds annual meetings at which papers are presented and discussions held, it publishes its proceedings, and it coordinates other activities.

Rhine stated that parapsychologists "need to decide whether we really do know where we belong and just what our territory is." He added, "When and as we know on what we can effectively concur and can sufficiently share this remapping of our area of investigation, it should give needed assurance that we have a branch of science that is both well identified and logically outlined." The key literature of the field is not easily selected.[35] The pull of popular and dramatic fields of study on psi research is certainly strong, and the cordiality with which parapsychologists have been received in such circles as the humanistic psychology movement may certainly have been seductive and gratifying. At the same time, such fields as meditation and biofeedback have offered seemingly fruitful areas for the development and exploration of ESP faculties, often providing new settings and conditions in the promising area of consciousness expansion.

The research undertaken by Dr. Karlis Osis illuminates the current trend. Osis began work at the Duke laboratory in 1952, took the post of director of research at the Parapsychology Foundation (established by Mrs. Eileen J. Garrett in 1952) in 1957 and has since 1962 served as director of research of the ASPR. His work during this period of some 20 years has included studies on psi in animals, research with mediums in the survival field, deathbed observations by doctors and nurses, and out-of-the-body phenomena. The hypothesis that altered states of consciousness might facilitate the function of ESP has provided links between parapsychological experimentation and studies in biofeedback, "mind-expansion," and related practices. In their private lives, number of experimental parapsychologists have shown an terest in the implications of practices of current interest, cluding various forms of meditation and even su physiological practices as acupuncture.

When we said at the outset that the history of parapsych ogy is a microcosm of modern science,[30] we viewed this pect as a reflection of the field's sensitivity to the evoluti ideas, and even controversies of science (and, for that matt religion and philosophy) as a whole. Religion, as much crisis today as it was when the British psychic researchers gan their quest, cannot even now be separated from parap chology, if only as a motivating force to research activi The growth of Spiritual Frontiers Fellowship in the Unit States and the Churches' Fellowship for Spiritual and Psyc Studies in Great Britain illustrates an undercurrent of inter among clergy and laymen of virtually all denominations. T raison d'être for parapsychological studies in the Sov Union, on the other hand, has been that discoveries material, physiological bases of psychic phenomena wo tend to remove them from the religiomystical. Vasiliev[34] stat that telepathy research might well prove "a strong and sh weapon [in] the hands of materialistic-analytical science, pable of combating certain difficult-to-eradicate mysti views and assumptions."

The material presented in this volume is indicative of variety of distinctly scientific inquiries that are going on day, evolving from the foundations of psychic research as emerged from man's history, by way of the Sidgwick-My "star-light walk" of nearly a century ago.[18] Caution and timism have been key attitudes among serious searchers a researchers in this field. This was true of Aristotle's hesitan mixed with open-mindedness, concerning claims for premo tory dreams. It was equally true of William James,[15] w could speak of "one's moral and human impatience with phenomena" but who also expressed in patient optimism t "we must expect to mark progress not by quarter-centuri but by half-centuries or whole centuries." As is often case, we can do no better than to let James have the word.

REFERENCES

1. Allison, Lydia W. "Fifty Years of American Psychic Research." *Newsletter of the Parapsychology Foundation, Inc.*, March–April, 1956.
2. Amadou, Robert. *La Parapsychologie.* Paris: Editions Denoël, 1954.
3. American Society for Psychical Research, *Proceedings of the American Society for Psychical Research.*
4. Bender, Hans, ed. *Parapsychologie: Entwicklung, Ergebnisse, Probleme.* Darmstadt: Wissenschaftliche Buchgesellschaft, 1966.
5. Broad, C. D. *Religion, Philosophy and Psychical Research.* New York: Humanities, 1969.
6. Brown, Salter. *The Heyday of Spiritualism.* New York: Hawthorn, 1970.
7. Driesch, Hans. *Lebenserinnerungen.* Munich: Reinhardt Verlag, 1951.
8. Ebon, Martin. *They Knew the Unknown.* New York: World, 1971.
9. Gauld, Alan. *The Founders of Psychical Research.* New York: Schocken, 1968.
10. Glanvill, Joseph. *Saducismus Triumphatus,* with an introduction by Coleman O. Parsons. Gainesville, Fla.: Facs. ed. Scholars' Fascimiles and Reprints, 1966.
11. Haynes, Renée. *The Hidden Springs.* London: Hollis and Carter, 1961.
12. Le Clair, Robert C., ed. *The Letters of William James and Théodore Flournoy.* Madison: University of Wisconsin Press, 1966.
13. Litvag, Irving. *Singer in the Shadows.* New York: Doubleday, 1972.
14. Murphy, Gardner. *The Challenge of Psychical Research.* New York: Harper and Row, 1961.
15. Murphy, Gardner, and Ballou, Robert O. *William James on Psychical Research.* New York: Viking, 1960.
16. Myers, F. W. H. *Human Personality and Its Survival of Bodily Death.* London: Longmans Green, 1903.
17. Nelson, G. K. *Spiritualism and Society.* New York: Schocken, 1969.
18. Nicol, J. Fraser. "Lo, the Poor Researcher." *Tomorrow,* III, 4, Summer, 1954.

19. Parapsychology Foundation, Inc. *Introduction* *Parapsychology*. New York, 1965.
20. Parapsychology Foundation, Inc. *Proceedings of Four In ternational Conferences of Parapsychological Studie* New York, 1957.
21. Pratt, J. Gaither. *Parapsychology: An Insider's View* *ESP*. New York: Doubleday, 1964.
22. Rao, K. Ramakrishna. *Experimental Parapsychology:* *Review and Interpretation*. Springfield, Ill.: Thoma 1966.
23. Rhine, J. B. *Extra-Sensory Perception*. With a forewor by William McDougall and an introduction by Walte Franklin Prince. Boston: Humphries, 1934; repr. 1964.
24. Rhine, J. B. *The Reach of the Mind*. New York: Sloar 1947.
25. Rhine, J. B. "News and Comments." *Journal of Parapsy chology*, 1972, 170–176.
26. Rhine, J. B., and associates. *Parapsychology: From Duk to FRNM*. Durham, N.C.: Parapsychology Press, 1965.
27. Rhine, J. B., and Brier, Bob. *Parapsychology Toda* New York: Citadel, 1968.
28. Rhine, J. B., and Pratt, J. G. *Parapsychology: Fronti Science of the Mind*. Springfield, Ill.: Thomas, 1957.
29. Rhine, J. B.; Pratt, J. G.; Smith, Burke M.; Stuar Charles E.; and Greenwood, Joseph A. *Extra-Senso Perception After Sixty Years*. New York: Holt, 194 Boston: Humphries, 1966.
30. Smythies, J. G., ed. *Science and ESP*. New York: Humanities, 1967.
31. Society for Psychical Research, *Proceedings of the Society for Psychical Research*.
32. Somerlott, Robert. *Here, Mr. Splitfoot*. New York: Vi ing, 1971.
33. Tiemeyer, T. N. "In Defense of the Witch of Endor *Spiritual Frontiers*, III, 1, Winter, 1971.
34. Vasiliev, L. L. *Mysterious Phenomena of the Hum* *Psyche*. University Press, 1965.
35. White, Rhea A. "Parapsychology: The Psychic World *Wilson Library Bulletin*, November, 1972.

II.

PSYCHOTHERAPY AND PARAPSYCHOLOGY

“UPON THE KNEES OF THE GODS”

William James

Professor William James, the psychologist-philosopher, served as President of the Society for Psychical Research (London) in 1894–1895, and the following paper is adapted from his “Address by the President,” which appeared in the Society's Proceedings *(Part XXX, Vol. XII, June, 1896). James used his Presidential Address not only to review the Society's activities, prior to and during his term in office, but to advance his concept of the human personality “as a condition of events,” contradicting the prevailing scientific belief that “in its own essential and innermost nature our world is a strictly impersonal world.” James (1842–1910) is the author of* Principles of Psychology *(1890) and of the widely read* The Varieties of Religious Experience *(1902). As he mentions in this paper, William James was impressed by the mediumistic work of Lenore (Mrs. William J.) Piper, which showed apparent telepathic and clairvoyant elements. Dr. Gardner Murphy wrote in* William James and Psychical Research *(1960) that “regardless of the question whether the demonstration of continued existence beyond death is ever possible, psychical research has epoch-making implications for the extension of our understanding about the deeper levels of personality, and of the relation of personality to the universe in which it is placed.” These are precisely the implications that intrigued William James and which sustained his life-long interest in psychical research.*

Were psychical research as well organized as the other sciences are, the plan of a presidential address would be mapped out in advance. It could be nothing but a report of progress, an account of such new observations and new conceptions as the interim might have brought forth. But o active workers are so few compared with those engaged more familiar departments of natural learning, and the ph nomena we study so fortuitous and occasional, that two yea must, as a rule, prove too short an interval for regular a counts of stock to be taken. Looking back, however, on o whole dozen years or more of existence, one can apprecia what solid progress we have made. Disappointing as o career has doubtless been to those of our early members w expected definite corroboration or the final *coup de grâce* be given in a few short months to such baffling questions that of physical mediumship, to soberer and less enthusiast minds the long array of our volumes of *Proceedings* mu suggest a feeling of anything but discouragement. For her for the first time in the history of these perplexing subjec we find a large collection of records to each of which the e tors and reporters have striven to attach its own precise co- ficient of evidential value, great or small, by getting at eve item of firsthand evidence that could be attained, and by sy tematically pointing out the gaps. Only those who have tri to reach conclusions of their own by consulting the previo literature of the occult, as vague and useless, for the mo part, as it is voluminous, can fully appreciate the immen importance of the new method which we have introduced.

Little by little, through consistently following this plan, o *Proceedings* are extorting respect from the most unwilli lookers-on, and I should like emphatically to express my ho that the impartiality and completeness of record which h been their distinguishing character in the past, will be held even more rigorously in the future. It is not as a vehicle conclusions of our own, but as a collection of documents th may hereafter be resorted to for testing the conclusions a hypotheses of *anybody*, that they will be permanently impo tant. Candor must be their very essence, and all the hesi tions and contradictions that the phenomena involve mu appear unmitigatedly in their pages. Collections of this so are usually best appreciated by the rising generation.

The young anthropologists and psychologists who will so have full occupancy of the stage, will feel, as we have fe how great a scientific scandal it has been to leave a gr mass of human experience to take its chances between vag tradition and credulity on the one hand and dogmatic den at long range on the other, with no body of persons ext who are willing and competent to study the matter with b patience and rigor. There have been isolated experts, it is true, before now. But our Society has for the first time made their abilities mutually helpful.

If I were asked to give some sort of dramatic unity to our history, I should say first that we started with high hopes that the hypnotic field would yield an important harvest, and that these hopes have subsided with the general subsidence of what may be called the hypnotic wave. Secondly, I should say that experimental thought-transference has yielded a less abundant return than that which in the first year or two seemed not unlikely to come in. Professor [Charles] Richet's supposition that if the unexplained thing called thought-transference be ever real, its causes must, to some degree, work in everybody at all times (so that in any long series of card-guessings, for example, there ought always to be some excess of right answers above the chance number) is, I am inclined to think, not very well substantiated. Thought-transference may involve a critical point, as the physicists call it, which is passed only when certain psychic conditions are realized, and otherwise not reached at all—just as a big conflagration will break out at a certain temperature, below which no conflagration whatever, whether big or little, can occur. We have published records of experiments on at least thirty subjects, roughly speaking, and many of these were strikingly successful. But their types are heterogeneous; in some cases the conditions were not faultless; in others the observations were not prolonged; and generally speaking, we must all share in a regret that the evidence, since it has reached the point it *has* reached, should not grow more voluminous still. For whilst it cannot be ignored by the candid mind, it yet, as it now stands, may fail to convince coercively the skeptic. Any day, of course, may bring in fresh experiments in successful picture-guessing. But meanwhile, and lacking that, we can only point out that our present data are strengthened in the flank, so to speak, by all observations that tend to corroborate the possibility of other kindred phenomena, such as telepathic impression, clairvoyance, or what is called "test-mediumship." The wider genus will naturally cover the narrower species with its credit.

Now, as regards the work of the Society in these latter regards, we can point to solid progress. First of all we have that masterpiece of intelligent and thorough scientific work—I use my words advisedly—the Sidgwick Report on the Census of Hallucinations. Against the conclusion of this repo that death-apparitions are 440 times more numerous th they should be according to chance, the only rational answ that I can see is that the data are still too few, that the n was not cast wide enough, and that we need, to get fair ave ages, far more than 17,000 answers to the Census-questio This may, of course, be true, though it seems exceedingly u likely, and in our own 17,000 answers veridical cases m have heaped themselves unduly. So neither by this repo then, taken alone, is it absolutely necessary that the skep be definitively convinced. But then we have, to strengthen flank in turn, the carefully studied cases of "Miss X." a Mrs. Piper, two persons of the constitution now coming to nicknamed "psychic" (a bad term, but a handy one), ea person of a different psychic type, and each presenting ph nomena so chronic and abundant that, to explain away t supernormal knowledge displayed, the disbeliever will c tainly rather call the subjects deceivers, and their believe dupes, than resort to the theory of chance-coincidence. T same remark holds true of the extraordinary case of Staint Moses . . . In all these cases . . . we are, it seems to m fairly forced to choose between a physical and a moral mi cle. The physical miracle is that knowledge may come to person otherwise than by the usual use of eyes and ears. T moral miracle is a kind of deceit so perverse and success as to find no parallel in usual experience. But the limits of p sible perversity and success in deceit are hard to draw— here again the skeptic may fall back on his general *non p sumus*, and without pretending to explain the facts in deta say the presumption from the ordinary course of Nature s holds good against their supernormal interpretation. But oftener one is forced to reject an alleged sort of fact by method of falling back on the mere presumption that it ca be true because, so far as we know Nature, Nature runs al gether the other way, the weaker does the presumption its get to be; and one might in course of time use up one's p sumptive privileges in this way, even though one started our anti-telepathists do) with as good a case as the great duction of psychology that all our knowledge comes by use of our eyes and ears and other senses. And we m remember also that this undermining of the strength of a p sumption by reiterated report of facts to the contrary d not logically require that the facts in question should all well proved. A lot of rumors in the air against a busin man's credit, though they might all be vague, and no one of them amount to proof that he is unsound, would certainly weaken the *presumption* of his soundness. And all the more would they have this effect if they formed what our lamented [Edmund] Gurney called a faggot and not a chain, that is, if they were independent of each other, and came from different quarters. Now our evidence for telepathy, weak and strong, taken just as it comes, forms a faggot and not a chain. No one item cites the content of another item as part of its own proof. But, taken together, the items have a certain general consistency; there is a method in their madness, so to speak. So each of them adds presumptive value to the lot; and cumulatively, as no candid mind can fail to see, they subtract presumptive force from the orthodox belief that there can be nothing in any one's intellect that has not come in through ordinary experiences of sense.

But it is a miserable thing for a question of truth to be confined to mere presumption and counter-presumption, with no decisive thunderbolt of fact to clear the baffling darkness. And sooth to say, in talking so much of the merely presumption-weakening value of our records, I have been wilfully taking the point of view of the so-called rigorously scientific disbeliever, and making an *ad hominem* plea. My own point of view is different. For me the thunderbolt *has* fallen, and the orthodox belief has not merely had its presumption weakened, but the truth itself of the belief is decisively overthrown. If you will let me use the language of the professional logic-shop, a universal proposition can be made untrue by a particular instance. If you wish to upset the law that all crows are black, you mustn't seek to show that no crows are; it is enough if you prove one single crow to be white. My own white crow is Mrs. Piper. In the trances of this medium, I cannot resist the conviction that knowledge appears which she has never gained by the ordinary waking use of her eyes and ears and wits. What the source of this knowledge may be I know not, and have not the glimmer of an explanatory suggestion to make; but from admitting the fact of such knowledge, I can see no escape. So when I turn to the rest of our evidence, ghosts and all, I cannot carry with me the irreversibly negative bias of the rigorously scientific mind, with its presumption as to what the true order of nature ought to be. I feel as if, though the evidence be flimsy in spots, it may nevertheless collectively carry heavy weight. The rigorously scientific mind may, in truth, easily overreach itself. Science means, first of all, a certain dispassion method. To suppose that it means a certain set of results t one should pin one's faith upon and hug forever, is sadly mistake its genius, and degrades the scientific body to status of a sect.

But I am devoting too many words to scientific logic, a too few to my review of our career. In the question of phy cal mediumship, we have left matters as baffling as we fou them, neither more nor less. For if, on the one hand, we ha brought out new documents concerning the physical mirac of Stainton Moses, on the other hand we have, by Hodgson-Davey experiments, and the Paladino episode, v largely increased the probability that testimony based on c tain sorts of observation may be quite valuless as proof. sapia Paladino has been to us both a warning and encouragement. An encouragement to pursue unwaverin the rigorous method in such matters from which our *Proce ings* have never departed, and a warning against drawing prompt inference whatever from things that happen in dark. The conclusions to which some of us had been has led on "the island," melted away when, in Cambridge, the portunity for longer and more cunning observation was affo ed. Some day, it is to be hoped, our *Proceedings* may enabled to publish a complete study of this woman's l Whatever were the upshot of such a study, few docume could be more instructive in all ways for psychical research.

It is pleasant to turn from phenomena of the dark-sitt and rat-hole type (with their tragi-comic suggestion that whole order of nature might possibly be overturned in o own head, by the way in which one imagined oneself, o certain occasion, to be holding a tricky peasant woma feet) to the "calm air of delightful studies." And on credit-side of our Society's account a heavy entry must be made in favor of that immense and patient collecting miscellaneous firsthand documents that alone has enabled Myers to develop his ideas about automatism and the subl inal self. In Mr. Myers's papers on these subjects we see, the first time in the history of men's dealings with occult ters, the whole range of them brought together, illustrated piously with unpublished contemporary data, and treated thoroughly scientific way. All constructions in this field be provisional, and it is as something provisional that Myers offers us his attempt to put order into the tangle.

thanks to his genius, we begin to see for the first time what a vast interlocked and graded system these phenomena, from the rudest motor automatisms to the most startling sensory apparition, form. Mr. Myers's methodical treatment of them by classes and series is the first great step toward overcoming the distaste of orthodox science to look at them at all.

But our *Proceedings* contain still other veins of ore for future working. Ghosts, for example, and disturbances in haunted houses. These, whatever else may be said of them at present, are not without bearing on the common scientific presumption of which I have already perhaps said too much. Of course, one is impressed by such narratives after the mode in which one's impressibility is fashioned. I am not ashamed to confess that in my own case, although my *judgment* remains deliberately suspended, my *feeling* toward the way in which the phenomena of physical mediumship should be approached has received from ghost and disturbance-stories a distinctly charitable lurch. Science may keep saying: "such things are simply impossible"; yet, so long as the stories multiply in different lands, and so few are positively explained away, it is bad method to ignore them. They should at least accrete for future use. As I glance back at my reading of the past few years (reading accidental so far as these stories go, since I have never followed up the subject) ten cases immediately rise to my mind. The Phelps-case at Andover, recorded by one of the family, in *McClure's Magazine* for this month; a case in China, in Nevius's *Demon Possession*, published last year; the case in John Wesley's life; the "*Amherst Mystery*" in Nova Scotia (New York, 1888); the case in Mr. Willis's house at Fitchburg, recorded in *The Atlantic Monthly* for August, 1868 (XXII, 129); the Telfair-Mackie case, in Sharpe's *History of Witchcraft* in Scotland; the Morse case, in Upham's *Salem Witchcraft*; the case recounted in the introduction of W. v. Humboldt's *Briefe an eine Freundin*; a case in the *Annales des Sciences Psychiques* for last year (p. 86); the case of the carpenter's shop at Swanland, near Hull, in our *Proceedings*, Vol. VII., Part XX, pp. 383–394. In all of these, if memory doesn't deceive me, material objects are said to have been witnessed by many persons moving through the air in broad daylight. Often the objects were multitudinous—in some cases they were stones showered through windows and down-chimney. More than once it was noted that they fell gently and touched the ground without shock. Apart from the exceptionality of the

9c1187

reputed occurrences, their mutual resemblances suggest
natural type, and I confess that until these records, or oth
like them, are positively explained away, I cannot feel
spite of such vast amounts of detected fraud) as if the c
against physical mediumship itself as a freak of nature w
definitively closed. But I admit that one man's psychologi
reaction cannot here be like unto another's; and one gr
duty of our Society will be to pounce upon any future case
this "disturbance" type, catch it while red-handed and nail
fast, whatever its quality be.

We must accustom ourselves more and more to playing
rôle of a meteorological bureau, be satisfied for many a ye
to go without definitive conclusions, confident that if we o
keep alive and heap up data, the natural types of them
there are any) will surely crystallize out; whilst old mater
that is baffling will get settled as we proceed, through its an
ogy with new material that will come with the baffling ch
acter removed.

But I must not weary your patience with the length of
discourse. One general reflection, however, I cannot h
asking you to let me indulge in before I close. It is relative
the influence of psychical research upon our attitude tow
human history. Although, as I said before, Science taken
its essence should stand only for a method, and not for
special beliefs, yet, as habitually taken by its votaries, Scie
has come to be identified with a certain fixed general bel
the belief that the deeper order of Nature is mechanical
clusively, and that nonmechanical categories are irratio
ways of conceiving and explaining even such a thing as
man life. Now this mechanical rationalism, as one may
it, makes, if it becomes one's only way of thinking, a viol
breach with the ways of thinking that have, until our o
time, played the greatest part in human history.

Religious thinking, ethical thinking, poetical thinking, te
ological, emotional, sentimental thinking, what one might
the personal view of life to distinguish it from the imperso
and mechanical view, and the romantic view of life to dis
guish it from the rationalistic view, have been, and even
are, outside of well-drilled scientific circles, the domin
forms of thought. But for mechanical rationalism, persona
is an insubstantial illusion; the chronic belief of manki
that events may happen for the sake of their personal sig
cance, is an abomination; and the notions of our grandfat

133
EBD

about oracles and omens, divinations and apparitions, miraculous changes of heart and wonders worked by inspired persons, answers to prayer and providential leadings, are a fabric absolutely baseless, a mass of sheer *un*truth. Now, of course, we must all admit that the excesses to which the romantic and personal view of Nature may lead, if wholly unchecked by impersonal rationalism, are direful. Central African Mumbo-jumboism is one of unchecked romanticism's fruits. One ought accordingly to sympathize with that abhorrence of romanticism as a sufficient world-theory; one ought to understand that lively intolerance of the least grain of romanticism in the views of life of other people, which are such characteristic marks of those who follow the scientific professions today. Our debt to Science is literally boundless, and our gratitude for what is positive in her teachings must be correspondingly immense. But our own *Proceedings* and *Journals* have, it seems to me, conclusively proved one thing to the candid reader, and that is that the verdict of pure insanity, of gratuitous preference for error, of superstition without an excuse, which the scientists of our day are led by their intellectual training to pronounce upon the entire thought of the past, is a most shallow verdict.

The personal and romantic view of life has other roots beside wanton exuberance of imagination and perversity of heart. It is perenially fed by *facts of experience*, whatever the ulterior interpretation of those facts may prove to be, and at no time in human history would it have been less easy than now—at most times it would have been much more easy—for advocates with a little industry to collect in its favor an array of contemporary documents as good as those which our publications present. These documents all relate to real experiences of persons. These experiences have three characters in common: they are capricious, discontinuous, and not easily controlled; they require peculiar persons for their production; their significance seems to be wholly for personal life. Those who preferentially attend to them, and still more those who are individually subject to them, not only easily *may* find but are logically bound to find in them valid arguments for their romantic and personal conception of the world's course.

Through my slight participation in the investigations of the Society for Psychical Research, I have become acquainted with numbers of persons of this sort, for whom the very word Science has become a name of reproach, for reasons that I now both understand and respect. It is the intolerance of

Science for such phenomena as we are studying, her perem
tory denial either of their existence, or of their significan
except as proofs of man's absolute innate folly, that has s
Science so apart from the common sympathies of the race.
confess that it is on this, its humanizing mission, that our S
ciety's best claim to the gratitude of our generation seems
me to depend. We have restored continuity to history. W
have shown some reasonable basis for the most superstitio
aberrations of the foretime. We have bridged the chasn
healed the hideous rift that Science, taken in a certain narro
way, has shot into the human world.

I will even go one step further. When from our present a
vanced standpoint we look back upon the past stages of h
man thought, whether it be scientific thought or theologic
thought, we are amazed that a Universe which appears to
of so vast and mysterious a complication should ever ha
seemed to any one so little and plain a thing. Whether it
Descartes' world or Newton's; whether it be that of t
materialists of the last century or that of the Bridgewat
treatises of our own; it always looks the same to us—incre
bly perspectiveless and short. Even Lyell's, Faraday's, Mill
and Darwin's consciousness of their respective subjects are
ready beginning to put on an infantile and innocent look.
it then likely that the Science of our own day will escape t
common doom, that the minds of its votaries will never lo
old-fashioned to the grandchildren of the latter? It would
folly to suppose so. Yet, if we are to judge by the analogy
the past, when our Science once becomes old-fashioned,
will be more for its omissions of fact, for its ignorance
whole ranges and orders of complexity in the phenomena
be explained, than for any fatal lack in its spirit and prin
ples. The spirit and principles of Science are mere affairs
method; there is nothing in them that need hinder Scien
from dealing successfully with a world in which person
forces are the starting point of new effects. The only form
thing that we directly encounter, the only experience that
concretely have, is our own personal life. The only compl
category of our thinking, our professors of philosophy tell
is the category of personality, every other category being o
of the abstract elements of that. And this systematic den
on Science's part of personality as a condition of events, t
rigorous belief that in its own essential and innermost natu
our world is a strictly impersonal world, may, conceivably.
the whirligig of time goes round, prove to be the very defe

hat our descendants will be most surprised at in our own oasted Science, the omission that, to their eyes, will most end to make *it* look perspectiveless and short.

But these things lie upon the knees of the gods. I must eave them there, and close now this discourse, which I regret hat *I* could not make more short. If it has made you feel hat (however it turn out with modern Science) our own Soiety, at any rate, is not "perspectiveless," it will have amply erved its purpose . . .

PSYCHIATRIC INSIGHTS INTO PSI

Jule Eisenbud

Dr. Eisenbud's paper is based on a lecture he presente the Symposium on Variety of Psychic Research, University California, Berkeley, February 23–25, 1974. As a psyc trist and psychoanalyst of long standing, and as a para chological researcher who has shown a notably imagina approach toward the challenges of the field, Eisenbud li the two fields that have been the centers of his lifelong volvement. The author has been Associate Clinical Profes of Psychiatry at the University of Colorado Medical Sch since 1950. He is best known for his investigation of Serios, who by means of "thoughtography" seemed able impress images from his own mind onto photographic f Dr. Eisenbud's book on these experiments was published der the title The World of Ted Serios *(1967); he is also author of* Psi and Psychoanalysis *(1969). This text origin appeared in* Fate *Magazine (January, 1975).*

When I bring up the subject of psychiatric insights psychic phenomena I must start by admitting that onl handful of psychiatrists, mostly analysts, have addres themselves to the field. Happily, we few closely agree am ourselves as to what goes on. When more psychiatrists see light—which I am confident they will in time—I assume t too, will agree with what we thus far have established.

The psychiatric approach to psychic phenomena has a ferent objective than the conventional parapsychological proach and is based on a different set of assumptions. 1922 a correspondent, not a patient, wrote to pioneer psy atrist Sigmund Freud that he dreamed his second wife given birth to twins. The following day he learned that daughter by his first wife, who lived in a distant city, had given birth to twins during the night, her confinement occurring about a month earlier than expected. The conventional parapsychologist hardly would give such a peculiar near-miss a second thought, chiefly because in the dream the wife rather than the daughter had the twins and also because the factor of chance is difficult to evaluate. Since the primary objective of the parapsychologist is to ascertain whether or not a given coincidence represents a psi event, his interest ceases when he cannot do this with any degree of reliability. His primary purpose in securing testimony, in pinpointing the precise circumstances of an occurrence, in securing affidavits and so forth, is to defeat the always present possibility of chance.

A psychiatrist, however, is not primarily interested in proving psychic phenomena. In the above incident Freud took the position that he did not know whether there was any validity to thought-transference but that if he provisionally made the assumption that there was, he could explain the correspondent's dream in perfectly straightforward psychodynamic terms. If, he reasoned, this correspondent had somehow learned of his daughter's confinement, then this information could be treated as a so-called day's residue no different in essence from any other event finding its way into a dream and subject to the modification process known as the dreamwork. Dreamwork censors or distorts basic information and elaborates it into a representation that disguises the underlying wish. In this instance, the hidden wish, Freud conjectured, was not that the second wife have twins but that the daughter who had the twins be in the position of the second wife—a thoroughly Freudian wish, as you can see.

Be that as it may, Freud was interested in eliminating the hypothesis of chance solely in order to make good psychoanalytic sense of the dream, not to prove telepathy had occurred. In fact it would have been just as satisfactory for his purposes, possibly more so, had he learned that the proud but incestuously inclined (that is to say, average normal) father had made a mistake in the expected date of confinement and really had unconsciously calculated the date with exactitude and thus had a perfectly "straight" dream incorporating his guilty wish; or that just before retiring he actually had received a telegram informing him of the twins' birth and had completely repressed that fact. What must have impressed Freud, however, was the simplicity and elegance of the telepathy hypothesis. With one stroke this obviated the necessity to search for far-out explanations like Freudian slips of memory or peculiar amnesias. The psi hypothesis, then, is simply a tool to the psychiatrist. It is a tool of great versatility in cases where a question exists as to the means of communication linking observable events that would fall into understandable patterns if some means of communication could be postulated.

Let me give another example. One day a woman named Barbara L. consulted me about undertaking psychoanalytic treatment with me. She wished to begin at once but made it a condition that I not tell her best friend, Mrs. K., who already was in treatment with me. I assured her that this information would have to come from her. On the next treatment day, following an intervening weekend, Mrs. K. called to cancel her appointment and did so each succeeding day during that week. On her return the following week she offered some weak excuses for her absences, quite apparently not the real reasons. She then reported two dreams which she had had just prior to her return. The first: *I had a 2:30 appointment with the handsome Latin hairdresser at Bonwit's. Although I got there on time, he made a gesture with his hands as if to say, "You're out." There was a plain-looking girl with kinky brown bobbed hair under a turban hat waiting for a haircut. She got impatient with his talking to me and drew the curtain of her booth. I felt unfairly treated in being pushed out in this way.*

Mrs. K.'s hour with me started at 2:30. Her immediate association to the handsome Latin hairdresser was the way her friend Barbara used to liken analysts to gigolo hairdressers who pamper neurotic women. She thought that the plain-looking girl with brown hair looked somewhat like Barbara. Then she remembered a radio story about two girls who were the best of friends until they decided to open a hairdressing establishment together. Becoming rivals for their chief male operator, they soon were deadly enemies. By this time I could not help feeling that Mrs. K. somehow had got wind of Barbara's appearance on the scene and that her staying away the previous week really was in response to this threatening fact. Any doubts I had about this conjecture vanished when Mrs. K. reported the second dream, which had occurred on the night following the first dream: *There was some question about making sleeping arrangements somewhere. Someone showed me a couch or an army cot with an extra section and started to pull it out as if to make the couch wider. I said* *something like, "Never mind that," so they put it back. Then I remembered looking down at another bed that was all made up and seeing a wet spot on it as if someone had urinated on it.*

Mrs. K. regularly reported to me the waspish remarks her friend Barbara made about analysis and analysts. Sometime earlier I had told her she was using her friend to cover her own obsessional doubts and negativism. She responded that it might be helpful to have Barbara in analysis with her at the same time so that I could then deal directly with the source of her negativism. She suggested having a double-sized couch which would accommodate both of them together and thought this idea was hilariously funny.

Now here, again, is hardly the sort of thing that would excite a parapsychologist. But the incident is of clinical value to the psychiatrist because it enables him to understand his patient's otherwise puzzling absence of a week as a kind of response to the threatening appearance of a rival on the scene. The psychiatrist's job is to connect events into meaningful patterns. He must assume a communications network behind all these events. He is not concerned with exactly how the information is conveyed. He postulates that *some* means must exist to connect event A with events B and C. So, for the psychoanalyst trying to connect events into psychologically meaningful patterns an unrestricted flow of information, via anything the parapsychologist can provide, is a helpful tool—but only a tool, not in itself the objective of his investigation.

As a tool, incidentally, the psychiatrist finds it advantageous to think in terms of 100 percent efficiency of the psi process. In this way he gains maximum leverage from the application of the various types of psi hypotheses that the parapsychologist seeks so laboriously to refine and pin down. Now the psychiatrist performs a curious switch. While up to this point he has used telepathy, clairvoyance, precognition and so forth to make sense of his data, he sooner or later begins to use his data to make sense of psi. Since this helps the psychiatrist to unify his point of view, he is not apt to concern himself too much with the fine points of logic and method. At all events, out of the psychiatrist's case material emerges a picture of psi phenomena somewhat different from the traditional view.

To begin with, the psychiatrist is not inclined to view psi phenomena as particularly *para*normal, certainly not mysterious otherworldly intrusions. He is more likely to regard p phenomena—telepathy, precognition, apparitions or wha ever—as adaptive maneuvers or behaviors. Consequently, h is not apt to identify psi phenomena with the good, spiritu side of man as contrasted with the crasser, earthier side c man's nature. And although he assumes that all persons ar potentially capable of manifesting psi abilities, he is likely t ask such simple questions as why this and not that, why nov and not at other times, much as a clinician would seek to ur derstand a fever, a rash or a pain within the framework of basically normal physiology under stress of some sort. Abov all, he seeks to understand what a given bit of psi behavic does for an individual, what place it has in his psychologic economy at a given time, much as he would seek to unde stand a dream, a manic excitement or depression or a tempe tantrum.

Guided by this point of view, the psychiatrist delineates picture of psi's role in everyday life somewhat at varianc with the romantic greeting-card view of psi as a vast subte ranean network of invisible valentines or Mother's Da messages linking all humankind in love and charity. Actuall psi seems no more under the guidance of positive or helpfu impulses than any of a person's normal cognitive or executiv functions. The so-called crisis telepathy or precognitior where a mother's vision of a tot tumbling out of a window c playing with matches enables her to forestall tragedy, is by n means the rule. In by far the greatest number of instances c paranormal knowledge of tragic, disastrous or unpleasar events, the bad news arrives too late or in too ambiguous form to do anybody much good, and even ostensibl foreknowledge, by the time anyone gets to do anything abou it, is about as helpful as yesterday's newspaper headlines.

But if our latent paranormal faculties do not save us c our loved ones from disaster, make money for us at the trac or in the market, or help us to solve our everyday problem then what *do* they do for us?

The study of dreams and other forms of telepathy and pre cognition in the psychotherapeutic situation indicates tha psychic events give us the sense that something supernatur has occurred, a miracle of sorts. This they do by the very fac that these coincidences come to our notice in defiance of th laws of space, time, and causality. Behind this, however, i frequently found the *need* for a miracle because of some spe cific stress situation at just this time in the person's life. Th value of the paranormal incident is not so much to resolve the stress situation in a realistic way as to establish the symbolic proposition: if one miracle, why not another? If this seemingly miraculous bit of telepathy, clairvoyance, or precognition can occur, why cannot the fixed, unalterable course of my life—the loss of a love object, of my biological or sexual powers, of my worth or integrity—be set right? At any rate, when paranormal events are studied in context, as they are in the psychoanalytic situation, they lose their quality of almost meaningless spontaneity, of being the senseless intrusion into our lives of a mysterious other dimension of existence. They can be seen as plaintive cries against a fate which in some way has diminished us.

Let me give an illustration of this, which also provides an example of how depth psychology can unmask a psi element in a seemingly unrelated cluster of events. Gretchen, a rather inhibited old-maidish woman of 30, brought the following dream to her analytic session: *My mother told me that Aunt Alma had had a baby and that I had to eat it because it was good for me. I was revolted at the idea . . . Then a nurse came in bearing a huge fried egg on a tray but it was as if this were my grandmother's baby. When I began to eat it I thought I'd throw up but I didn't and finished it.*

This dream, like most dreams, is a charade, presenting in dramatic and condensed form ideas that at first seem enigmatic. However, I was able to divine the latent thoughts behind the dream with little trouble when I learned that on the evening of the dream Gretchen had had a dinner party for several other bachelor ladies. We can imagine that at the end of the evening her thoughts must have been something like, "Alas, if the best I can do is to spend my evening with maiden ladies, it's hopeless." However, the dream presents two miracles of a sort in the biblical mold and the more hidden latent thoughts must run, "If Aunt Alma who is 72 and childless can have a baby and if Grandmother who recently died at nearly 90 can have a baby at her age and in her condition, then there is hope for me."

So far, despite the implicit allusions to a kind of biological miracle, there is nothing paranormal in the dream. For the first hint of this we will have to turn to my experience on the evening *after* the dream was reported when I happened to pick up a volume by Somerset Maugham in which he describes some extraordinary stunts carried out by a woman novelist in order to observe people's reactions. Maugham writes:

> When she went into the kitchen one morning she found the cook gasping; she asked what was the matter and the cook told her that she had just cut off the head of the chicken they were to have for dinner that night and then the headless chicken had laid an egg.
>
> "Show it to me," said Elizabeth.
>
> She looked at it pensively for a moment and then said: "Give it to his lordship for breakfast tomorrow."
>
> Next morning, sitting at table opposite her husband, she watched him as he ate the boiled egg. When he had finished she asked him: "Did you notice anything funny about that egg, Frank?"
>
> "No," he answered. "Was there anything peculiar about it?"
>
> "No, nothing," she said, "except it was laid by a dead hen."
>
> He gave her a startled look, sprang to the window and vomited. With a denture smile she added to me: "And d'you know, I don't believe he ever really loved me after that."

Here we see a possible connection to the dream. In bot the Maugham piece and the dream we see not only the ide of vomiting after eating an egg but miracles of sorts. In th dream, aged ladies, one of them in fact deceased, give birt in the Maugham anecdote a dead hen (you can't be ar more aged than that) gives birth to an egg. Thus in additio to "If Aunt Alma and Grandmother can have babies, etc we now have "If a dead hen can lay eggs, who knows?" T top it off, the implied punch line in this precognitive charac asserts not only the general proposition that miracles *can* ha pen but specifically that time, which is ticking relentless away into the irretrievable past taking with it the precio years of fertility, is not as absolute as it appears: it can yie to entreaty and be reversed.

Of course, to derive all this from the dream we have overlook for the moment that the solution was provided n by Gretchen's experience but by my own. The full sense the miraculous could not be savored by Gretchen until I to her about the piece I had read. When I did, however, Gretchen revealed not only that she was, as I suspected, in the middle of her period (when *her* eggs were being laid, as it were) but also that the following had taken place at her dinner party: She was serving a whole chicken for the first time. Her previous experience was only with prepared chicken parts and she had to hack away in a frightful manner to carve the bird. This led to amused comments by her bachelor-girl guests, whence the conversation got onto what happened to chickens when their heads are cut off. One girl asked if anyone knew that if its neck were plunged into boiling water the chicken lost all further power of movement. This so revolted Gretchen that she thought she might throw up.

Here we have the missing link between Gretchen's dream and the Maugham piece; or, put slightly differently, the Maugham piece about the headless chicken, which I read *after* the dream, provided what was necessary to fit together Gretchen's experience of the previous evening with the manifest and latent contents of her dream.

Now, the psychiatrist requires two sets of complementary assumptions to derive the fullest clinical gain from the foregoing material. First, he must make assumptions about how the dream transforms a situation of stress—"Here I am 30, once more seeing my eggs go down the drain, and with only other bachelor girls to spend my evenings with"—into a seemingly supernatural dispensation from the laws of time and reality, a biblical miracle served up with a dash of Grimm's fairy tales. A typical dream does exactly this, however, and so far we are on secure ground. Then the psychiatrist also has to invoke the hypothesis of precognition to extract the real bonus from this material. Precognition is, in fact, indispensable, as without it the first set of assumptions is severely hobbled. But how account for the precognitive element occurring not in Gretchen's experience but in my own? I, in fact, had to impart this knowledge to her before she could appreciate the "miracle" in her dream.

The psychiatrist, concerned merely with utilizing the assumption of precognition for the clinical leverage it can give him, now invokes a purely empirical principle that has been confirmed over and over by psychiatrists who have encountered paranormal events in the psychotherapeutic situation. This is that the involvement of the therapist in such occurrences, far from being a regrettable irregularity that only

poses difficulties of interpretation, is in fact the rule. Fr
quently, the missing link is found not in the analyst's outwar
experience but in his inner, often repressed material that th
psi event may bring to light. This inner material of the ana
lyst often accords with the patient's repressed material wit
astonishing specificity. In the present instance I soon realize
that my real concern was with my own daughter, just out
her teens, with whom, because of her disdainful attitu
toward the young swains of the community, I tended to ide
tify Gretchen. Indeed, the fleeting thought had occurred
me more than once that if things kept on that way, in a
other decade or so my daughter might well be in Gretchen
sad situation. Not long before Gretchen's dream my daug
ter, fresh from a noisy spat with her younger brother, a
nounced that children were miserable creatures and that s
never would have any if she could help it. I was about to a
plaud her decision and tell her that she couldn't imagine wh
trouble she would thereby avoid, when I checked myself wit
the thought that perhaps my daughter *wasn't* too eager f
children. All she might need would be such a remark fro
me to reinforce her attitude. In any event, I could see th
my unconscious attitude toward Gretchen was contaminate
by my concern for my own daughter.

Many dreams in the psychoanalytic situation have show
similar mechanisms. The guiding principle in the elucidatio
of these complex charades I term the principle of triangul
tion. In brief, if a patient's dream appears to correspond in
paranormal way to an external event in either her or the an
lyst's experience (or both), the analyst must search for his i
ner, probably repressed material which corresponds with
provides the key to the dream.

In all cases the paranormal event represents a return to th
world of childhood where the lessons of reality have not y
been firmly learned and the wish still reigns supreme. Gene
ally, the patient weaves some repressed conflict of the an
lyst's into his or her own dream in order to tar the analy
with the same brush, to be able to say in effect, "You to
need this balm, this magical solace; you too need to mak
time stand still and regain your lost childhood's mother, yo
protective father, your worth, power, biological integrity
whatever."

I must emphasize, however, that in the majority of thes
psi-conditioned events the person with the psi experience
expressing some sketchy commentary in the marginalia of h

life rather than in the main text. In the few exceptions where psi brings about an actual connection between an inner need and the external world, this is just as likely to work against the person who has the dream or hunch as for him. The following case illustrates this. It involves a set of events that the typical parapsychologist probably would not have the opportunity to observe and because of the lack of unifying hypothesis almost certainly would not perceive as particularly interesting.

My patient Freda L. some time ago seized the opportunity provided by her husband Albert's being away on a business trip to let a low-burning flirtation with her friend George blossom into a full-fledged affair. When Freda saw me on the following day she made light of her escapade and denied any feelings of conflict or guilt. Certain telltale physical symptoms, however, indicated conflict of which she was unaware. I also pointed out to Freda that her devil-may-care attitude about conducting the affair in her own home, far from indicating an absence of guilt, as she claimed, could signify an unconscious wish to be caught. Freda continued to deny any uneasiness about her behavior.

Following her session with me that afternoon, Freda was again to be with George, this time in a downtown hotel. After this she was to meet Albert's mother for dinner and the theater. Arriving quite late for her rendezvous with her mother-in-law Freda made up the story that she unexpectedly had run into certain old acquaintances, Marge and Lou Bacon, with whom she had gone to have a friendly cocktail. The Bacons had moved from Freda's suburban community several years before and hence, Freda explained, their names had popped into her head on the spur of the moment to lend a casual documentation to her lie. Her mother-in-law had heard of the Bacons but never had met them. No sooner had Freda and her mother-in-law taken their seats in the theater when who should take a seat directly in front of them but Marge Bacon. Marge immediately spotted Freda and greeted her effusively as a long-lost friend, mentioning when she saw that Freda was not with Albert that her husband, too, had gone out of town. Introductions were unavoidable. Freda's attempt to slur over Marge's name only made things worse. Later, Freda had all she could do to keep from blurting out the whole story: her tangled explanation became so obviously contrived that her mother-in-law's suspicions of something close to the truth were pretty much confirmed.

The lesson in this story is that there is little reason to ex pect that one's latent psi powers will be used differently fro our more conventional powers. Our guilt needs may served by our psychic abilities as well as by the ordinary mi judgments, mistakes, and self-engineered disasters to whic psychoanalysis classically has devoted itself. One wou gather from some of the more enthusiastic forecasts in ou mushrooming psychic literature that nothing less than psi the sky is the limit and that after all of us get the hang tapping our vast subconscious potentialities, presumably w will be relieved of many of the ills that earthbound flesh now heir to. But if man could learn these techniques it likely he would also learn new techniques for doing himse in.

Now, to conclude: One of the more annoying characteri tics of psychiatry, particularly of psychoanalysis, has been i proprietary attitude toward reality, its constant harping "the reality principle," as if reality were its special area competence. But let us make no mistake about it, there such a thing as reality. It may not be the cozy reality of th psychiatrists, nor the tight little reality of the classical phys cists, and it surely must include the realm of psychic phenom ena. But we must not imagine that the world of the mind an the imagination is entirely without conditions and constraint To take the position that the world of psychic phenomena the real world, a truer world than the world of everyday ex perience, instead of perhaps an essential if still little unde stood part of this world, is to fall into a sorry trap.

Individually, we not only perceive the world differentl but in still largely unexplored ways we create it, each a cording to his own. The reality of the New Guinea Arape is quite different from that of the Balinese, which is differe again from the world of William Blake or Carlos Castaneda Don Juan. Nevertheless, these worlds all have certain bas shared patterns and a fundamental cohesiveness that cann easily and certainly cannot permanently be altered. Who know but what this may be, because of an unconscious conspiracy our parts to keep the world we create as it is, as we someho agree to make it? There is an ecology to psychic phenomen Powerful counterforces always oppose the antichance devi tions from the slowly changing equilibria of the world, just surely as counterforces come into play to contain the effec of DDT or of penicillin. The more experienced lamas and y gins and mystics always have known this and consequently have had no difficulty living in two worlds.

There is a danger, then, in going overboard on psychic phenomena. One needs a certain existing integrity of the personality to be able wholesomely to dabble in psychic phenomena or immerse oneself in psychic research (which indeed may be one reason why so much research is rigid and chickenhearted). I don't believe that such dabbling or such immersion, at least in the case of the classical phenomena, is of any use therapeutically. On the contrary, many if not most psychiatrists have seen the sad results of attempts to tap the psychic realm for this purpose. It is not at all rare to see persons who have been on the ragged edge to begin with, pushed into their private hells by attempting through immersion in the psychic world to come to grips with their real inner problems. Let psi lie, is the best advice I can give the amateur.

MOTHER-CHILD SYMBIOSIS: CRADLE OF ESP

Jan Ehrenwald

---

*The author, one of the pioneers of studies in the relatio
ship between parapsychology and psychology, chose this p
per as among those most nearly representing his interests. D
Ehrenwald observed telepathic and/or clairvoyant relations i
the psychoanalytic setting early in his career; he published h
first book on this subject,* Telepathy and Medical Psycholog
*(1947), more than thirty years ago. His writings have a
peared in a variety of journals and touch on such varied el
ments as music, history, and biography; his latest book,* Th
ESP Experience, *(Basic Books, 1978), is a harvesting of th
author's often provocative ideas and unique data on paraps
chology in its relation to psychiatry. This paper was read at
meeting of the American Association of Humanistic Psycho
ogy, Washington, D.C., September, 1969; it was originall
published in* The Psychoanalytic Review *(Vol. 58, No. 3, N
vember, 1971). Reprinted by permission of the publisher, N
tional Psychological Association for Psychoanalysis.*

The mother-child relationship has always been considered
source of profound emotional closeness and communicati
intimacy between the two. Whether or not a telepathic el
ment is involved in this state of affairs is still a matter of co
troversy. The problem is thrown into sharper perspectiv
however, when we turn our attention to the early symbiot
relationship between mother and child—where "it all starte
in the first place.

Symbiosis has been defined as a physiologically reciproc
dependent relationship between two different organisms, b
neficial for both. Although the emphasis on a biological di
ference between the two respective organisms does not strict

apply to human symbiosis, its basic features can readily be discerned in the early postpartum period. They are brought home to us through direct observations by child psychiatrists, and they can be further corroborated by psychoanalytic reconstruction in the treatment situation.

There is general consensus among observers that in the early postpartum phase the mother's and the neonate's ego boundaries have not as yet been delineated. Their respective egos are merged into one. The baby is a direct extension of his mother's body image. She "does the doing" for him. She feeds him when he is hungry. She gives him warmth when he is cold. She lifts his covers when he is warm. She diapers him when he is wet. She monitors his physical and social environment on his behalf. She is the omnipotent, omniscient, bountiful mother figure.

The baby, in turn, partakes of her purported omnipotence. Mother or mother's breast—as well as the universe at large—are there at his beck and call. Indeed, analytic reconstruction suggests that, from his point of view, it is he who exercises virtual control over his mother's behavior. His signals of distress, his whimper or cry, his kicking and flailing send her scurrying to his aid. This is what Ferenczi[12] has called the omnipotence of movements or what Masud Khan[17] has termed symbiotic omnipotence, as reflected in the psychoanalytic situation.

Dovetailing or interlocking behavioral attitudes of this order are evidently a direct continuation of the embryo's and the maternal organism's flawless biological cooperation. It has been described as postpartum gestation; as the continued functional unity of the mother-child dual[4] or as the "primary unit."[1]

How is this biological unity and reciprocity maintained despite the physical separation of parent and offspring? What is responsible for their perfect "fit," for their delicately balanced homeostasis and functioning in concert? The neonate, though highly vocal, is nonverbal. His expressive movements can barely indicate more than distress or comfort, hunger or satiation. He lacks fully functional afferent or efferent neural pathways. The myelinization of his nerve sheathes is delayed up to the fourth or fifth month of extrauterine life. Still, the efficacy of interaction between mother and baby seems to exceed the limited repertoire of whatever conventional signaling code joins them together as one functioning whole. In short, how does mother know if baby cannot tell? How d baby respond when he doesn't understand?

Apart from the old standby of subliminal sensory cues unconscious expressive movements, the usual answer points the part played by instinct, by intuition or empathy in symbiotic partnership. Child analysts speak of "one unc scious" communicating directly with "another unconsciou Margaret Mahler[18] specifically notes that in man "the nor empathy substitutes for those instincts on which the anima able to rely for survival. Communication on this level occ by mutual cueing, by the mother's selective response to se tive cues from the infant's needs, tensions. . . ." T Mahler holds, results in a pattern of *circular interaction* tween the two. In short, she postulates a nonverbal feedb loop to account for their concerted operation.

But these descriptive terms—whether they are borrov from general systems theory, clinical psychology, or psyc analytic ego theory—are largely metaphorical constructs troduced to cover up a gap in our understanding. It is at point that the telepathy hypothesis comes to our rescue.

Telepathy, to the extent that it is taken for granted by general public, is usually considered as a mere psycholog curiosity; as a freakish and ambiguous means of communi tion, without an apparent goal or discernible purpose. C versely, we have seen that the early symbiotic phase confro us with a relative communication gap in the mother-c dual without a tangible means to bridge it. The fact is tha the preverbal or nonverbal phase signals are exchanged mutual cueing occurs in a way which runs far ahead of infant's capacity to make himself understood. At the sa time mother seems to "understand" in a way which is diffi to account for in terms of the "ordinary" means of commu cation.

Thus, introducing the telepathy hypothesis into the sym otic model of the parent-child relationship helps to fill gap in our understanding of its functioning. But it does m than that: it assigns an important physiological function t otherwise seemingly superfluous vehicle of communication telepathy. It accounts for the modus operandi of the change of an infinite variety of primitive or proto-messa preverbal instructions and injunctions between mother child. At the same time, it suggests that telepathy is in e the embryological matrix of communication which is l destined to be superseded by speech.

We have to realize, however, that proto-messages of this
rder do not convey as yet clear-cut and well-defined cogni-
ve content. They convey distress calls or messages of com-
ort, endearment, or elementary reassurance. They are geared
o influencing behavior. They may impart information of
orts. But if so, it is on an elementary, preverbal, or non-
erbal level, comparable to the complex patterns of instruc-
ion carried by the genetic code or to the "bits" of coded
nformation a programmer feeds to his computer. More often
han not the messages are so vague and unobtrusive that they
ltogether escape the attention of an outside observer—at least
y presently available means of observation. They have all the
allmarks of primary process functioning. It is therefore
eadily understood that they are apt to meet with resistance
y those involved, including the supposedly detached clinical
bserver.

What, then, are the implications of our symbiotic model of
SP? It suggests that telepathy, at this stage, may indeed be a
itally important means of communication, serving the inte-
ration and smooth functioning of the mother-child unit and,
hereby, its very survival as a viable entity.

A brief digression into biology shows that this is particu-
arly true for the human child. We know that man, as com-
ared with other animals, is a late bloomer. This is an
bservation that was familiar to the ancient Greeks. More
han six centuries before Christ, Anaximander of Miletos
tated: "Whereas all other animals are speedily able to find
ourishment for themselves, man alone requires a long period
f suckling . . . and if he had been at the beginning such as
e is now, he would not have survived."

Modern students of biology and genetics have put such ob-
ervations on a scientific basis. Theodosius Dobzhansky[6] has
oted that it takes man twice as long as other primates, e.g.,
e apes, to reach "body growth," although the duration of
regnancy in apes is of the same order as in man. In any
ase, the human neonate is completely dependent and helpless
t birth; certainly more so than any other primate. In a simi-
ar vein, the human infant's sensory-motor skills and percep-
ual functions lag far behind those of other animals. I noted
bove that even the myelination of most of his neural path-
ays is incomplete up to the age of four or five months.

This state of affairs has given rise to the theory of "fetali-
ation" or neoteny proposed by Bolk,[3] Hallowell,[14] Dobzhan-
ky[6] and others. The term "fetalization" refers to the

extension of the fetal or embryological stage of developn
from the intrauterine period to the period of prolonged h
lessness or "extrauterine gestation" after birth.

Fetalization is a specifically human attainment. But at
same time it is a specifically human handicap which is
ducive to a major developmental crisis in the life of every
man child. It leaves him, among all animals, the
dependent on his parents or parent substitutes. This in
makes the maintenance of proper lines of communication
interaction with his social environment (and especially
his mother) a vital necessity for him. Yet I noted that in
absence of speech, and with the stunting of other mean
communication such as a highly developed sense of smel
social hormones available to the newborn of other spe
the human neonate's lines of communication with his mo
are rudimentary. Indeed, he is the only animal which ca
said to find himself in something like a communicative bl
out in the early symbiotic phase.

According to the hypothesis proposed here, the blacko
lifted and the psychological gap bridged by telepathic c
munication between mother and child. To be more pre
owing to the continued fusion of the maternal with the
natal ego, there is no psychological gap between the two
lepathy follows the pattern of intrapsychic communica
within one single, psychologically as yet undifferentiated
sonality structure.

However, with the gradual maturation of the child's
vous system and sensory organization, and with the passin
the symbiotic phase, the child emerges from the perio
partial communication blackout. His babbling and cooir
gradually supplanted by speech. His ego boundaries,
now fused with those of his mother, become more sharply
lineated. He sets up a barrier between his mother's m
processes and his own. He is no longer part and parcel of
personality. He establishes himself as an individual in his
right. Taking a cue from the diagrammatic picture of
division, this process can be described as "psychomitosis
is a phase which Margaret Mahler has more aptly desc
as the phase of separation-individuation.[18]

As this comes to pass, the direct sharing of psy
processes between mother and child is no longer necessa
nor indeed possible. The child can monitor his own env
ment. He can ward off excessive environmental stimuli
outside. He can direct his actions toward external objects

can express his needs in words. At the same time, the earlier telepathic patterns of communication become rudimentary. In fact, he erects increasingly effective barriers against their intrusion into the confines of his personality. Telepathy runs counter to the process of individuation—separation. With increasing vehemence the child protests against continued telepathic encroachment from outside: he wants to "do his own thing," however nebulous that may be. He becomes allergic to what I described as heteropsychotic influences[7] in much the same way as his organism as a whole is allergic to foreign protein. Indeed, I have pointed out elsewhere[8] that failing to insulate himself from influences of this order, he may head for a psychotic breakdown: he may turn into a schizophrenic child of the symbiotic or autistic type described by Kanner[16] and Mahler.[19]

It should also be noted at this point that there is a striking similarity between the screening out of heteropsychic influences and the repression of primary process functioning in the course of the child's development. The process is reinforced by what amounts to a mechanism of cultural repression directed against the return of ESP as the "culturally repressed." Reich's "armor plating" of character[22] may be of the same order.

The fact is that both Western man and his culture are programmed in such a way that the return of primitive mentality, as well as telepathy and related phenomena, is prevented and, if necessary, penalized by all means of social disapproval and ostracism available to the group. The rejection and repudiation of the telepathic factor by the growing child's ego has become mandatory in our culture. Its repression marks a second developmental crisis in his life cycle.

The gradually evolving negativistic attitude toward ESP does not, however, spell the end of occasional flashes of telepathic interaction between person and person in later life. It is true that telepathy, like the fetal circulation, ceases to be operational as a viable means of communication once the umbilical cord is cut. Yet, by contrast to certain anatomical structures, telepathy does not become altogether atrophic and defunct. Under special circumstances the abandoned tracks can be reopened and traffic on them activated again. A fleeting telepathic incident of the "spontaneous" type may make its appearance. It should be noted, however, that if it does so, the reactivated function still tends to exhibit telltale signs of its embryological origin; it may show all the characteristics of

Freud's primary process functioning; of symbolic represen tion; of prelogical, paleological, or of Piaget's preoperatio thinking and reasoning.[21]

This is why telepathy, as compared with the organis "standard" means of communication, is difficult to recon with the so-called laws of nature: with the principles of I clidean geometry, of Aristotelian logic, Newtonian mechan or with the Kantian categories of time, space, and causalit In this respect, psi phenomena indeed hark back to the "m strous farrago" of magic described by the Victorian anth pologists and to the timeless and spaceless qualities of Freudian id.

There are, however, several basic differences between ancient conceptions of magic and psi phenomena, or betw primary process functioning and ESP. We should realize th according to psychoanalytic theory, omnipotence of thou action at a distance, etc., are fallacies characteristic of primary process. They are therefore generally considered be figments of the imagination based on wishful thinking poor reality testing.

Yet, as I mentioned before, the existence of ESP. and psi phenomena in general, has been amply confirmed by tual observations. They are manifestations of a psychic rea in its own right—not just fantasies or wishful thinking. the extent that traces of magic mentality, of poor reality t ing, or of spatial and temporal anomalies can still be cerned in psi phenomena, this is due to their origin during early symbiotic stage. Psi phenomena carry the imprint of particular time in the individual's life cycle at which they made their appearance. This accounts for their regres quality, for their resemblance to magic or primitive menta and for the stigma of irrationality which continues to be tached to them. This also is the reason for modern m tendency to their repudiation, denial, and cultural repressio

Viewed in the developmental perspective, ESP seems t an intrinsic feature of the ontogeny of the human child corollary of his prelogical or preoperational ways of think But with the passing of that stage, telepathy becomes n and more incompatible with the logical, Aristotelian min the adult. And more than that: telepathy holds the threa what Freud has called the "Return of the Repressed."

To repeat, telepathy may have originally been little n than a makeshift expedient hit upon by the evolutio process to bail man out from a temporary embarrassme the early postnatal phase and from the difficulties attending the process of fetalization. Viewed in the light of genetic perspective, telepathy and related phenomena are indeed regressive features of the human mind.

There is one more point which has to be made in this connection. The regressive quality of ESP is in good keeping with its relatively frequent occurrence in the psychoanalytic situation. As a matter of basic principle, regression is one of the corollaries of the transference relationship. This is why the psychoanalytic situation in effect amounts to a duplication of the symbiotic model. It is a situation in which the therapist plays the role of the parent and the patient the role of the child. Yet we also know that it may at the same time become a veritable breeding ground of telepathy between the two.[9] The analyst's couch, we could say, is transformed into an adult equivalent of the "cradle of ESP." Other regressive manifestations of psi phenomena may be mentioned in passing only. There are the familiar telepathic incidents in crises, in hypnotic and mediumistic trance; there are the claims made by parapsychologists of extrachance result in ESP experiments under the influence of psychedelic drugs, etc.

This should remind us once more that telepathy and related phenomena are by no means confined to the early symbiotic phase. There is a large body of evidence which indicates that telepathy between parent and child continues to play a significant part in the further course of the child's development.

Parapsychologists have reported a great number of anecdotal accounts of this kind. For instance, Dr. Louisa E. Rhine[23] reports the following case in one of her recent books: "A woman was pondering the name of a man whose telephone number she was reluctant to call. At that very moment her two-year-old daughter said his name: *Arno Kraus*." It is a trivial incident, but one among countless others of the same type. I myself have reported similar ones.[7] In another of Dr. Rhine's cases, a child, aged four, echoed her mother's thoughts when she asked: "Are we having spaghetti for dinner?" Dr. Rhine's own daughter, aged three, did the same thing when she piped up: "Mamma, are you fatter now than you have been?" Her mother was at that moment struggling with the temptation to eat just one more piece of buttered toast.

Dorothy Burlingham[2] described several telepathic incidents in children. In one case her own ten-year-old son was in-

volved. It was concerned with gold coins in an apparent t
pathic response to a similar story mentioned by one of
Burlingham's patients undergoing psychoanalysis at that ti
In another case, a mother had just gotten the idea of giv
her child a bicycle for Christmas. The child, in another roo
called out: "I know what you are going to give me
Christmas: a bicycle." In a third case, the child "guess
that her mother was pregnant before this fact was known
the mother.

The psychiatrist Berthold Schwarz[24] has assembled a uni
collection of observations of telepathy in his daughter, L
when she was between one and three and a half years
His paper describes ninety-one incidents in which he or
wife played the role of the telepathic agent. The follow
brief example may illustrate the point:

> I walked into the kitchen feeling quite exuberant and thought I would clown by showing Lisa a Nijinsky-like kick. However, before I could demonstrate, she started to kick and do a little dance. She had never done this before. In this way, perhaps, she acted out, in motor fashion, my happy behavior that was about to emerge from its silent incubation.

The overall impression gained from Schwarz' ninety-
telepathic incidents suggests that there were three major
disposing or conditioning factors involved in the occurren
First, the symbiotic aspect of the parent-child relations
Second, the child's tendency to what I described as doctr
compliance—that is, the tendency to provide evidence c
firming her father's emotionally charged expectations rega
ing the validity of his pet hypotheses concerning ESP. (T
is a striking counterpart of similar observations in the th
peutic situation, psychoanalytic or otherwise. Here, too
could show that the patient's productions may tend to vali
the therapist's emotionally charged theoretical presupp
tions.) A third factor seems to have been Lisa's own psyc
logical needs, her mood of contentment, etc. Dr. Sch
notes that the episodes occurred most frequently "at the in
section of the parents' and the child's emotional needs."

Another group of observations has been widely discu
in the psychoanalytic literature. They are the cases of Sz
and Johnson,[15] Sperling[25] and others, in which the child t

to act out the parents' repressed antisocial impulses. This may lead to delinquency or other behavioral disturbances.

Here again the *modus operandi* of such "acting out" has remained obscure and it is the telepathy hypothesis which can fill the gap in our understanding of it.

In one of my cases little Dick C., aged four, acted out his mother's hostile-destructive impulses toward Mr. C., twenty years her senior. Dick was the issue of one of his mother's extramarital affairs. Although this had, for obvious reasons, remained a closely guarded secret, the boy drove his mother to desperation by his compulsive questioning: "Is Daddy my real Daddy? Yes, he is my Daddy—but is he my *real* Daddy?"[10]

In this instance, Dick's hostile-destructive behavior toward Mr. C. is amenable to interpretation along "orthodox" psychiatric lines. But his compulsive questioning is not. It contains reference to a specific point of information which could not have reached him through the usual channels of communication and which he was not likely to have arrived at by rational inference. At the same time, it was conspicuously tagged by what I described as telepathic "tracer elements"; that is, by "bits" of information pointing more specifically to their heteropsychic origin than does such ill-defined mental content as "hostile-destructive attitudes" or the like. Joan FitzHerbert has reported similar observations in adopted children.[13]

What is perhaps the strongest clinical evidence of telepathy in the mother-child relationship is, however, derived from cases of an altogether different order. They are observations in mentally defective or otherwise handicapped children who, because of their existing defect, remain in a prolonged symbiotic relationship with their respective mothers. They can be summarized here in broadest outline only.

The first case is that of Ilga K., published in 1935 by Ferdinand von Neureiter,[11] a professor of forensic medicine in Germany. Ilga, aged nine, was suffering from a severe reading disability. She was, however, able to "read" any text if and when her mother was perusing it at the same time. Experiments revealed that Ilga could do so even when her mother was sitting behind a curtain or in another room. Little Bo, a retarded boy of eleven, was described by R. M. Drake of Wesleyan College, Macon, Georgia.[5] Bo was similar to Ilga in that he too seemed capable of "reading" only when his mother, a tense and over-anxious woman, was, as it were,

functioning vicariously in his behalf. Originally he w
thought to be a “lightning calculator” because he was able
do complicated sums or multiplications despite his intellectu
limitations. It soon transpired, however, that this too he cou
do only if and when his mother was doing the calculatio
“in her head.” A third case, in which the subject is knov
only as the “Cambridge Boy,” was recently published by
A. Peters and his co-workers in England.[20] The boy was su
fering from spastic diplegia and congenital cataracts in bo
eyes. Yet his ophthalmologist was puzzled by his striking ab
ity to “read” the visual acuity charts when the boy’s moth
was hovering over him. A telepathic factor was suspected
account for his unexpected performance. A series of long d
tance experiments involving telepathy between the boy a
his mother indeed seemed to confirm this hypothesis.

These three illustrative cases have three things in commo
First, they all involve a handicapped child or adolescent. Se
ond, their respective mothers all had a strong, sometim
frantic, motivation to help their offspring to overcome th
disability. Third, there was prima-facie evidence of a te
pathic factor—of telepathic “tracer elements”—in all thr
youngsters’ performances and the telepathy hypothesis h
been put to special tests by the observers.

The cases differ, however, from those discussed earlier
that they occurred in individuals long past the normal sym
otic phase; that the ostensible telepathic communication
volved highly specific material such as numerals, letters of t
alphabet or printed sentences; and that the performance
the telepathic twosome served an eminently utilitarian pu
pose: it was triggered and sustained by the respective mo
ers’ powerful motivation to compensate, by their own effor
for their offsprings’ disabilities. They tried to function vica
ously in their behalf. Thus, it appears that in these examp
it is the existing psychobiological emergency and societal
mands which are responsible for the prolongation of speci
features of the symbiotic phase.

It is true that helping a child to overcome a reading
arithmetic disability is a far cry from trying to compens
for biological defects which would jeopardize his surviv
But despite the highly differentiated compensatory functio
set in motion in the three cases we have just described.
concordance of the children’s performances with the sym
otic model is unmistakable. Therein lies their significance
the present context. They suggest that telepathy can indeed

he carrier of seemingly trivial "bits" of information, or racer elements, as well as of influences, messages or protomessages of crucial biological importance. In so doing, such bservations serve as collateral evidence in support of the ymbiotic origin of telepathic communication, which was the tarting point of this discussion.

REFERENCES

1. Benedek, T. "The Psychosomatic Implications of the Primary Unit: Mother-Child." *American Journal of Orthopsychiatry,* Vol. 19, 1949, 642-654.
2. Burlingham, D. "Child Analysis and the Mother." *Psychoanalytic Quarterly,* Vol. 4, 1935.
3. Bolk, L. *Das Problem der Menschenwerdung.* Jena: Fischer Verlag, 1926.
4. Deutsch, H. *The Psychology of Women,* Vol. 2. New York: Grune and Stratton, 1945.
5. Drake, R. M. "An Unusual Case of ESP." *Journal of Parapsychology,* Vol. 2, 1938.
6. Dobzhansky, T. *Mankind Evolving.* New Haven: Yale University Press, 1962.
7. Ehrenwald, J. *Telepathy and Medical Psychology.* New York: W. W. Norton, 1948.
8. ———. "Human Personality and the Nature of Psi Phenomena." *Journal of the American Society of Psychical Research,* Vol. 62, No. 4, 1968.
9. ———. *New Dimensions of Deep Analysis.* London: Allen and Unwin, 1954.
10. ———. *Neurosis in the Family.* New York: Hoeber Medical Division, Harper and Row, 1963.
11. ———. Hirnpathologische Bemerkungen zu einem Falle von "Paranormalen" Erscheinungen bei einem Kinde (Ferdinand von Neureiter). *Zeitschrift für die gesamte Neurologie und Psychiatrie,* Nr. 132, 1931.
12. Ferenczi, S. "Stages in the Development of the Sense of Reality (1913)." *Sex in Psychoanalysis.* New York: Basic Books, 1950.
13. FitzHerbert, J. "The Role of Extrasensory Perception in Early Childhood." *Journal of Medical Science,* Vol. 106, 1960.
14. Hallowell, A. I. "Culture, Personality and Society." In A

L. Kroeber, ed., *Anthropology Today*. Chicago: Chica
University Press, 1953.

15. Johnson, A., and S. Szurek. "The Genesis of Antiso
Acting Out in Children and Adults." *Psychoanal
Quarterly*, Vol. 21, 1952.
16. Kanner, L. "Early Infantile Autism." *Journal of Ped
rics*, Vol. 25, 1944, 211-217.
17. Khan, M. "On Symbiotic Omnipotence." In J. A. L
don, ed., *The Psychoanalytic Forum*. New York: Scie
Books, 1969.
18. Mahler, M. *On Human Symbiosis and the Vicissitudes
Individuation*. New York: International Universi
Press, 1968.
19. ———. "On Child Psychosis and Schizophrenia: Auti
and Symbiotic Infantile Psychosis." *The Psychoanal
Study of the Child*, Vol. 7, 1952, 286-305.
20. Peters, R. A. et al. "Some Trials in a Case of Alleged
lepathy." *Journal of the American Society for Psych
Research*, Vol. 44, No. 738, 1968.
21. Piaget, J. *The Origins of Intelligence in Children*. N
York: International Universities Press, 1952.
22. Reich, W. *Character Analysis*. New York: Orgone In
tute Press, 1949.
23. Rhine, L. E. *Hidden Channels of the Mind*. New Yo
William Sloane Associates, 1961.
24. Schwarz, B. E. "Telepathic Events in a Child One
Three and a Half Years of Age." *International Jou
of Parapsychology*, Vol. 3/4, 1961, 5-52.
25. Sperling, M. "The Neurotic Child and His Mother:
Psychoanalytic Study." *American Journal of Ortho
chiatry*, Vol. 21, 1954, 351-364.

THE INTERFACE BETWEEN PARAPSYCHOLOGY AND HUMANISTIC PSYCHOLOGY

Stanley Krippner

Dr. Krippner is Program Planning Coordinator of the Humanistic Psychology Institute in San Francisco. He edits Advances in Parapsychological Research: A Biennial Review, *is editor emeritus of* Psychoenergetic Systems: An International Journal, *and past president of the Association for Humanistic Psychology. Dr. Krippner traces his early interest in psychic phenomena to the personal influence of leading personalities in parapsychology, notably Dr. Gardner Murphy, with whom he worked as a graduate student at the University of Hawaii in 1960. Later, Krippner was closely associated with Montague Ullman, M.D., directing the Dream Laboratory's telepathy studies undertaken at Maimonides Medical Center, Brooklyn, New York. Speaking of the relationship between psychical research and humanistic psychology, Dr. Krippner states that the two disciplines supplement each other in his own "search for a fuller understanding and appreciation of human potentialities."*

As one attempts to discern the connection between humanistic psychology and parapsychology, it is tempting to remain at a superficial level of analysis. For example, several parapsychological papers and symposia are presented each year at the annual meeting of the Association for Humanistic Psychology. In addition, psychical research has been featured at AHP's international conferences. Division 32 (Humanistic Psychology) of the American Psychological Association often schedules parapsychological presentations at the APA's annual conventions.

Psychologists and psychotherapists who identify their a proach as "humanistic" tend to be more open-mind concerning the validity of parapsychological occurrences th psychologists with other orientations. Colleges which inclu a significant proportion of "humanistic psychologists" on the faculties almost invariably offer courses in psychical researc However, the relationship between parapsychology and h manistic psychology exists at a deeper level (Krippner a Murphy, 1973) and reflects the key theoretical concepts humanistic psychology outlined by Charlotte Bühler (1971).

1. *The Study of the Person as a Whole:* Psi, the subje matter of parapsychology, can be seen to operate in freque reported personal experiences which defy an easy explan tion. A person may dream of an impending catastrophe b fore it happens. A "psychic healer" may be involved in t remarkable recovery of a person from a fatal disease. The personal experiences represent a complex configuration forces, very few of which are taken into account in the typ cal laboratory experiment with extrasensory percepti (ESP) or psychokinesis (PK). Tests with ESP cards and wi PK influences on dice reflect the behavioristic influence whi dominated American psychology for many years, placing a emphasis on the observed response of a subject while neglec ing "the person as a whole." The studies which have be reported correlating psychic ability with personality trai (e.g., Schmeidler, 1960) are a promising beginning in t task of studying the whole person and investigating some the variables which are seen to operate in a real-life situati when ESP or PK occurs.

2. *The Course of Human Life as a Whole:* There a several clues in the anecdotal and experimental literatu which would be worthwhile pursuing if developmental histo and longitudinal study approaches were to be applied parapsychology. One of the most outstanding subjects in J. Rhine's early research was a young girl who, at the age nine, made "hits" on all 25 guesses in a deck of ESP car (Reeves and Rhine, 1942). It has been suggested that ch dren may be better subjects in psychical research than adu because children's ESP and PK abilities have not yet be stifled by a critical society (Krippner, 1963). The autobi graphical writings of Eileen J. Garrett (e.g., 1969) conta considerable material of value to the investigation of psych development over the course of human life.

Garrett (1970) has recalled how she was often consider a "nuisance" as a child because she could tell when people were lying and when they were telling the truth. She has stated, "As I look back now, I smile over the things I did, but then I was living in a world nobody else understood." Despite the provocative indications that psi may change over the years of a person's life, there are few longitudinal studies of gifted subjects in the parapsychological literature,* nor are there comparative studies which compare ESP or PK performance of people at different ages. K. Ramakrishna Rao (1966) has lamented, "Unfortunately, the published experimental reports do not often involve an assessment of the subjects."

3. *Human Existence and Intentionality:* The parapsychological literature and the writings of humanistic psychologists overlap in the discussion of intentionality, specifically in the concepts of "sense of self" and "free will." A. H. Maslow (1956) has described how the person with a fragile sense of self typically possesses a limited capacity for self-determination. The self-concept of high-scoring ESP subjects was found to be important by Gertrude Schmeidler and R. A. McConnell (1958), who administered the Rorschach technique to subjects in an ESP study. High-scoring subjects differed from low-scoring subjects in that the former displayed more of a readiness to accept new experiences as well as a lack of rigidity in perception and a high degree of "psychological self-sufficiency."

The concept of precognition is thought by some people to threaten the idea of free will, but Rao (1966) has argued that parapsychological data support free will in several ways: (a) The fact that it is possible to be aware of objects and events that are not in existence now but will exist sometime in the future makes it absurd to maintain that an external event determines or causes everything that comes into our awareness; (b) PK data indicate that human volitions can cause changes in external objects—a reversal of the position that external forces account for the internal processes of the mind.

4. *Motivation and Goal Setting:* The importance of identifying human goals in humanistic psychology studies is echoed by the attention paid to motivation by some parapsychologists. J. B. Rhine (1964) once investigated the personal mo-

---

* The work of Berthold E. Schwarz (e.g., 1974) stands as a welcome exception to this generalization.

tives of seven gifted subjects to make high ESP scores; each case, there was an "exceptionally strong" drive to sc highly. Schmeidler's experiments (1946) with "believers" a "nonbelievers" in ESP indicate that the believers genera tended to make high scores, possibly because of their person motivation. The nonbelievers tended to produce not mer chance results, but to "psi-miss," making low scores whi were statistically significant in the opposite direction; th phenomenon may have been related to personal motiv against identifying the correct ESP card.

Rao (1966) has summarized the data in this area by sta ing, "It would seem, therefore, that religious values, the se confidence of the subject, and the novelty of the te conditions, insofar as they are found to contribute to t success of the subject, may help to raise his motivation." R suggests that just about anyone may become a high-scori subject for a psi experiment if the researcher determines ho to maximize that subject's motivation. It might be added th unconscious experimenter motivation often influences search results in both psychology and parapsychology; bo humanistic psychologists and parapsychologists are vital interested in Robert Rosenthal's (1970) work with "expe menter effects."

5. *The Integrative Process:* Humanistic psychologists s one's integrative process as a basic human potentiality process which orders and unifies one's other potentials. T ordering of values and the search for meaning assist the in grative process; ESP and PK abilities can emerge from th integration. Schmeidler (1960) reported a Rorschach stu involving 1,062 subjects rated as "well adjusted" or "poo adjusted." She found that the "well-adjusted" subjects w "believed" in ESP scored significantly higher than the "we adjusted" subjects who did not "believe" in ESP; there we no significant differences between the "poorly adjuste groups. Schmeidler (1960) concluded that the element of b lief in ESP "will be more pronounced for subjects who social adjustment is good than for those whose social adju ment is poor."

For many highly developed psychic sensitives, the in gration of paranormal events into their personal world-vi and behavioral repertoire represents a developmental ch lenge. In his extensive psychological study of Eileen J. G rett, Ira Progoff (1964) came to the conclusion that she w a remarkably integrated individual and that her mediumis “controls” played an important part in this integration. Progoff’s study serves as a model for other humanistic psychologists to emulate as they examine psychic sensitives from a scientific perspective.

6. *Creativity and Goal-Setting:* In the previously discussed basic theoretical concepts of humanistic psychology, two have been presented representing areas in which parapsychology could benefit from a study of such writers as Charlotte Bühler, A. H. Maslow, Rollo May, and Carl Rogers. Three have been presented in which there are overlapping areas of mutual interest. The remaining three theoretical concepts represent contributions which parapsychology may make to humanistic psychology. Creativity, more than any other human behavior, is seen as a manifestation of Ludwig von Bertalanffy’s theory (1966) that the human brain represents an “open system” with certain freedoms of operation and potentials for change. Parapsychological data also support this notion; J. B. Rhine (1935) has written of the mind’s occasional ability to function independently of the physical body, a possibility most dramatically expressed by subjects in “out-of-body” experiments (Swann, 1975).

In addition, there are several experiments which demonstrate a relationship between psychic ability and creative ability (e.g., Honorton, 1967; Moss, 1969; Schmeidler, 1964). A number of anecdotal reports from the lives of gifted people are often cited to link psi and creativity (e.g., Dreistadt, 1971). Gardner Murphy (1958) has observed that parapsychological data raise “the question where one person begins another ends”—a question that has great implications for creativity.

7. *Person-to-Person Relationships in Psychotherapy:* Humanistic psychologists regard the personal relationship between therapist and patient as more important than the specific techniques used or the specific interpretations of behavior proposed. This position is supported by experimental data which show that the person-to-person relationship is important even in behaviorally oriented therapy which de-emphasizes the therapist-patient relationship (Ryan and Gizynski, 1971).

In taking the positions that they do, humanistic psychologists should be aware of the possibility that their patients may have telepathic experiences concerning the personal lives of their therapists. There is an abundance of psychoanalytic literature on psi in therapist-patient relationships (e.g., Ehrenwald, 1948; Ullman, 1959) that would be pertinent to humanistically oriented psychotherapist. N. V. Torna (1977) for his doctoral dissertation at the Humanistic chology Institute, presented responses from 609 psychiatr 12 percent of whom said there had been occurrences psi during their sessions with patients.

8. *Feeling, Experience, and Education:* Humanistic edu tion stresses what Carl Rogers (1969) calls "self-reliant le ing," which acknowledges the learner's emotional as wel intellectual experiences. A number of parapsychological periments indicate that successful teaching may have a component. For example, M. L. Anderson and R. A. W (1958) found that students who liked their teachers sco higher on ESP card-guessing tests (and received be grades) than students who did not like their teachers. manistic psychologists stress experiential education wh could well have a psi component. Instead of scoffing a student who reports an "out-of-body" experience or a t pathic dream, the teacher could deal with the report ope and authentically, using it to help the student enrich knowledge of oneself. It would not even be necessary to judgment on the validity of the report initially. The elicitat of extraordinary life episodes by teachers is vital if child are to recognize and appreciate "peak experiences." Mas (1971) notes, "It looks as if any experience of real ex lence, of real perfection, of any moving toward the per justice or toward perfect values tends to produce a peak perience." As examples, he cites "peak experiences" obtai through music, mathematics, personal relationships. childbirth. He concludes, "We may be able to use them a model by which to reevaluate history teaching or any o kind of teaching" (1971). To Maslow, learning one's iden is an essential part of the educational process. If educa fails at this task, it is without significant merit.

Conclusion

Finally, the world-view adopted by many humanistic chologists resembles that adopted by many psychic sensiti Alan Watts (1940) has described this world-view as on which the person "has the feeling of an unchanging cente himself—a center which is not exactly in his ego and not actly in his life, nature, or the unconscious as independen

e ego. It is the middle of the dance, the point around which
e partners revolve and in which they realize union."

An increasing number of scientists—who are neither
rapsychologists nor humanistic psychologists—are involved
research which demonstrates one's interaction with envi-
nmental forces. Y. A. Kholodov (1966) and A. S. Presman
970), for example, have investigated the body's electro-
agnetic and electrostatic fields from the vantage point of in-
rmation theory. Perhaps these phenomena relate to the "psi
lds" hypothesized by W. G. Roll (1966) and Karl Prib-
m's (1971) theory that information in the brain may be
stributed as a hologram.

Maslow's (1966) reconceptualization of scientific methods
d goals presents a humanistic science well equipped to en-
mpass ESP, PK, and other unusual phenomena which are
o important to ignore and too blatantly apparent to over-
ok. However, humanistic science must first of all be impec-
ble science; humanistic psychology must display excellence
ther than the casualness attributed to it by many critics.
umanistic parapsychologists must be just as aware of the pit-
lls of sensory cues, poor controls, and chicanery as psychic
search is of the behavioristic and psychoanalytic schools.
rdner Murphy (1963) concludes, "The people who are
king questions beyond operationalism or logical posi-
ism are asking the most profound questions about the lim-
of knowledge and particularly of knowledge of human
rsonality." These are the questions being asked by humanis-
parapsychologists and by psychical researchers. As each
counters the other, there is no reason why the meeting can-
t be mutually enriching for members of both disciplines.

REFERENCES

Anderson, M. L., and White, R. A. "ESP Score Level in Relation to Students' Attitude Toward Teacher-Agents Acting Simultaneously." *Journal of Parapsychology,* Vol. 22, 1958, 20-28.

Bühler, C. "Basic Theoretical Concepts of Humanistic Psychology." *American Psychologist,* Vol. 26, 1971, 378-386.

Dreistadt, R. "The Prophetic Achievements of Geniuses and Types of Extrasensory Perception." *Psychology,* Vol. 8, 1971, 27-40.

4. Ehrenwald, J. *Telepathy and Medical Psychology.* N
York: Norton, 1948.
5. Garrett, E. J. *Many Voices: The Autobiography o*
Medium. New York: Putnam's Sons, 1969.
6. Garrett, E. J. Interview. *Psychic,* Vol. 1, 1970, 4-7,
37.
7. Honorton, C. "Creativity and Precognition Scor
Level." *Journal of Parapsychology,* Vol. 31, 1967, 29-4
8. Kholodov, Y. A. *The Effect of Electromagnetic*
Magnetic Fields on the Central Nervous System. M
cow: Academy of Sciences, 1966.
9. Krippner, S. "Creativity and Psychic Phenomen
Gifted Child Quarterly, Vol. 7, 1963, 51-63.
10. Krippner, S., and Murphy, G. "Humanistic Psychol
and Parapsychology." *Journal of Humanistic Psycholo*
Vol. 13, 1973, 3-24.
11. Maslow, A. H. "Defense and Growth." *Merrill-Pal*
Quarterly, Vol. 3, 1956, 36-47.
12. Maslow, A. H. *The Farther Reaches of Human Nat*
New York: Viking, 1971.
13. Moss, T. "ESP Effects in 'Artists' Contrasted with 'N
artists.'" *Journal of Parapsychology,* Vol. 33, 1969,
69.
14. Murphy, G. "Parapsychology." In N. L. Faberow,
Taboo Topics. New York: Atherton, 1963.
14a. Murphy, G. *Human Potentiality.* New York: B
Books, 1958.
15. Presman, A. S. *Electromagnetic Fields and Life.* N
York: Plenum, 1970.
15a. Pribram, K. *Languages of the Brain.* Englewood C
N. J.: Prentice-Hall, 1971.
16. Progoff, I. *Image of an Oracle.* New York: Helix, 196
17. Rao, K. R. *Experimental Parapsychology: A Review*
Interpretation. Springfield, Ill.: Thomas, 1966.
18. Reeves, M. P., and Rhine, J. B. "Exceptional Score
ESP Tests and Conditions: I. The Case of Lillian." *J*
nal of Parapsychology, Vol. 6, 1942, 164-173.
19. Rhine, J. B. *Extra-sensory Perception.* Boston: Hu
ries, 1935.
20. Rhine, J. B. "Special Motivation in Some Excepti
ESP Performance." *Journal of Parapsychology,* Vol
1964, 41-50.
21. Rogers, C. R. *Freedom to Learn.* Columbus, Ohio:
rill, 1969.

Roll, W. G. "ESP and Memory." *International Journal of Neuropsychiatry*, 1966, *2*, 505-521.

a. Rosenthal, R. *Experimenter Effects in Behavioral Research*, rev. ed. New York: Irvington, 1976.

Ryan, V., and Gizynski, M. "Behavior Therapy in Retrospect: Patients' Feelings about Their Behavior Therapies." *Journal of Consulting and Clinical Psychology*, Vol. 37, 1971, 1-9.

Schmeidler, G. R. "An Experiment on Precognitive Clairvoyance: IV. Precognition Scores Related to Creativity." *Journal of Parapsychology*, Vol. 28, 1964, 102-108.

Schmeidler, G. R. "Progress Report on Further Sheep-Goat Series." *Journal of the American Society for Psychical Research*, Vol. 40, 1946, 34-35.

Schmeidler, G. R. "ESP in Relation to Rorschach Test Evaluation." *Parapsychological Monographs*, 1960, No. 14.

Schmeidler, G. R., and McConnell, R. A. *ESP and Personality Patterns*. New Haven: Yale University Press, 1958.

3. Schwarz, B. E. "Psi and the Life Cycle." *Journal of the American Society of Psychosomatic Dentistry and Medicine*, Vol. 21, 1974, 64-69.

9. Swann, I. *To Kiss Earth Goodbye*. New York: Hawthorn, 1975.

9a. Tornatore, N. V. "Employing the Paranormal Event in Analysis as a Psychotherapeutic Tool." In J. D. Morris, W. G. Roll, and R. L. Morris, eds., *Research in Parapsychology 1976*. Metuchen, N. J., Scarecrow Press, 1977.

Ullman, M. "On the Occurrence of Telepathic Dreams." *Journal of the American Society for Psychical Research*, Vol. 53, 1959, 50-61.

1. von Bertalanffy, L. "General Systems Theory and Psychiatry." In S. Arieti, ed., *American Handbook of Psychiatry*, Vol. III. New York: Basic Books, 1966.

2. Watts, A. *The Meaning of Happiness*. New York: Harper & Row, 1940.

White, R. A., and Dale, L. A. *Parapsychology: Sources of Information*. Metuchen, N.J.: Scarecrow, 1973.

THE PSYCHIC WORLD OF C. G. JUNG

Aniela Jaffé

Mrs. Aniela Jaffé, now a psychotherapist in Zurich, wa
many years Professor Jung's personal assistant. She wa
strumental in persuading him to prepare his final, and r
ble, autobiographical work, Memories, Dreams, Reflect
(1963), and acted as editor of the volume. Her wri
have served to make much of Jung's thought, actions, an
titudes accessible to a wider public. Mrs. Jaffé is also on
the editors of Jung's Letters; with tact, understanding,
patience, she had helped both a scientific and general p
to penetrate the often complex ideas and writings tha
main the heritage of C. G. Jung. This article originally
peared in Tomorrow *(Vol. IX, No. 2, Spring, 1961). Copy*
© 1961 by Garrett Publications.

To Carl Gustav Jung, parapsychology is not merely
subject of scientific research, theory, or experiment—al
life he has encountered dramatic experiences in the are
spontaneous, acausal phenomena. It would seem that he
been particularly sensitive to psychic events. That, how
does not explain the extent of his experience. Sensitivi
the manifestations of the unconscious must be supplem
by constant and objective study. A person less alert than
would not have recognized that there are worlds on e
side of the psychic curtain.

Clairvoyant dreams and incidents of precognition
happened quite often in Jung's life. But still they are
frequent happening; and when they do occur, he always
them with surprise, indeed, with the awe that a magica
perience deserves. Jung's interest in the supernatural fo
the example of his mother (Emilie Jung, née Preis

849-1923). She left a diary in which she had recorded hostly phenomena, presentiments, and other "unusual occurrences." As a child, she had helped to protect her father, amuel Preiswerk (1799-1871), administrator of the Reormed Congregation in Basle, from ghosts; when he wrote is sermons, she had to sit behind him, so that the "ghosts" would not disturb him! The medical diagnosis which Jung ter assigned to his grandfather—and at the same time cast side as "mere hearsay"—stated that "he suffered from wakng hallucinations." His wife, C. G. Jung's grandmother, Austa Preiswerk (née Faber, 1805-1862) also was a ghost-seer." The family attributed this talent to the fact that, s a girl, she had been seemingly dead for thirty-six hours. Her abilities were remarkable, even in the light of careful udgment. She saw apparitions of persons unknown to her, ut whose historic existence was later proven.

Jung's interest in parapsychology as a science began during is early medical studies. The closing years of the last century were a time when the words "somnambulism" or "spiritualsm" were much in vogue. One of his student friends, Albert Oeri, described Jung's interests, on the occasion of his sixtieth irthday, in a contribution to *Die Kulturelle Bedeutung der Komplexen Psychologie* (Berlin, 1935), as follows:

"I cannot deny that Jung showed considerable courage in is studies. He did extensive research in spiritualistic literaure and did a good deal of experimentation in the field. The onvictions that he developed as a result remained with him ntil they were modified by more thorough psychological tudies. He was up in arms when official science, at that time, imply denied the existence of occult phenomena, rather than ttempt to study or explain them. He regarded such spiritualsts as Zöllner and Crookes, whose lives fascinated him, as eroic martyrs of science [Johann C. F. Zöllner, 1834-1882, Professor of Physics and Astronomy at the University of Leipzig, published reports of sittings with various mediums in work entitled *Transcendental Physics;* Sir William Crookes, 832-1919, an outstanding physicist of his time, did extensive ersonal research in spiritualism]. He found participants for is spiritualistic séances among friends and relatives. . . . It was delightful, when visiting Jung in his lodgings, to listen to is little lectures on the subject. His charming dachshund ooked on as if he understood everything; Jung used to say that the sensitive animal would whimper pitifully when occult forces were active in the house."

Oeri, who later became a member of the Swiss Parliar and editor of the daily newspaper *Basler Nachrichten*, pc out that Jung did not remain satisfied with readings in oc literature, but organized his own experiments in 1899 1900. The medium was one of his cousins, a 15-year school girl. This research was analyzed in his dissertation the Psychology and Pathology of So-Called Occult Phenc na," which has been republished in Jung's Collected Worl While he was preparing this work, two such "occult phen ena" took place in the home he was sharing with his wido mother and sister. The first incident involved a heavy wa table, an heirloom, that split with a crash. The second nomenon involved a bread knife, stored inside a drawer, t in some inexplicable manner and with a loud bang, split four pieces. In both cases, Jung and his mother were pres The four parts of the knife are still in his possession.

Jung's dissertation on occult phenomena is of particular terest, as it contains the germs of some of his later b concepts. He reported, for instance, that a medium in tra communicated the utterings of "personalities," who migh defined as personifications of unconscious personality ments. This indicated not only the existence of the psych many-faceted, but also forecast the concept of the "aut mous complexes" of the unconscious; early in the twen century, Jung defined this idea more firmly in his associa experiment, regarding it as an important factor in the i play of unconscious events. Another of his later ideas foreshadowed in this early work: the principle of compe tion by the unconscious for events within the conscious n Jung observed that personified unconscious complexes, w emerged during trance, supplemented the conscious towa greater completeness. Specifically, he observed the trance formance of his young cousin whose general personality rather primitive and naive; as a medium, she constantly duced the personality of an aristocratic and socially pr nent woman, apparently her unconscious ideal. Althoug apparent mediumistic ability lessened as time went by, the girl tried to cover the lack of trance results thr fraud, her "higher personality" emerged in later years unstable young woman developed self-assurance and ev ally established a shop of her own, in which she was ab develop her artistic ability. [She was later identified as Helene, or "Helly," Preiswerk.]

Jung explained the impression that mediumistic developments seem most frequent during puberty with the hypothesis that they represented attempts at character development: he wrote at the time that the emergence of a trance identity might be regarded as a "breakthrough attempt of a future personality that, because of special difficulties (such as unsuitable environmental conditions, or a psychopathic disposition) is linked with particular disturbances of the conscious mind. Under such conditions, mediumistic manifestations have a distinct teleological meaning, connected with the difficulties faced by the future personality; they give the individual means toward a victory that would otherwise doubtlessly turn into defeat."

Jung regarded such phenomena in the same light that he later threw onto neuroses: he detaches them from a causal viewpoint and investigates their basic meaning within the framework of a wider human development. Students of Jung's psychology will be interested to know that his dissertation on the occult contained the first illustration of a "mandala" (a picture of a gnostic system of the world and its forces) which formed the high point of the young medium's manifestations, just before her work went downhill.

Although Jung's active interest in parapsychology continued steadily, this inquiry did not actually emerge in his research work until his lecture to the Society for Psychical Research, London, delivered in 1919 [see "The Psychological Foundations of Belief in Spirits," which follows this paper], dealing with spirit beliefs. In this paper Jung stated that "spirits" and other psychic phenomena should psychologically be regarded as "unconscious autonomic complexes, that are being projected." In other words, he regarded them as "exteriorized forms of unconscious complexes." He links this to the ideas expressed in his earlier dissertation as follows:

"I am convinced that we are dealing with exteriorizations. I have, for instance, observed several instances of the telepathic impact of unconscious complexes; I have also observed a series of parapsychic phenomena. However, in all this I cannot see any proof for the actual existence of spirits, but must regard this area of phenomena for the time being as another segment of psychology."

When in 1947—thirty years later—the paper appeared in a new edition, Jung added a footnote to this sentence, which r flected his later ideas on the relationship between the natu of the collective unconscious and his conception of chetypes. His footnote reads as follows: "After collecting ps chological experiences from many people and many countr for fifty years, I no longer feel as certain as I did in 191 when I wrote this sentence. To put it bluntly, I doubt wheth an exclusively psychological approach can do justice to t phenomena in question. Not only the findings of parapsych ogy, but my own theoretical reflections, outlined in 'On t Nature of the Psyche,' have led me to certain postula which touch on the realm of nuclear physics and the conce tion of the space-time continuum. This opens up the wh question of the trans-psychic reality immediately underlyi the psyche."

It would be an error to interpret these remarks as a dec ration of spiritualist belief, or to regard them as a metaphy cal conclusion. However, Jung's research work has given h the understanding that a certain unrecognizable reality exi beyond the world of the psyche; such reality, in his view, a pears to exist beyond the causal manifestations of time a space, where the law of causality comes to an end, and whe time and space are themselves relative.

Parallel to this realization, Jung developed his concept the archetype: beyond archetypal images of the soul—who variety and color creates the world of dreams, fairy tales a fantasies—lies the archetype, in its strictest sense, as an un cognizable formative element. In contrast to archety images, the archetype itself may not be regarded as a pure psychic entity; Jung calls it "psychoid."

This expansion of depth psychology eventually led to closer relationship between psychology and physics, in part ular atomic physics. The late physicist, Wolfgang Pauli, ma this point with particular emphasis. This rapprochement w possible, because Jung had come to regard the archetype a "psychoid" entity. In this manner, he removed it from t area of the purely psychological. At the same time, physi was faced with the same problem of noncausality—becau of elements of discontinuity in the atomic process—that co fronted psychology because of parapsychological phenome Jung, in his realization of the trans-psychological reality psychic manifestations, approached one side of the bord area of the timeless and spaceless that the physicists confro ed in their own work. Physics could not avoid, in the phra of the noted British physicist Sir James Jeans (1887-1946), adopting a "deeper layer of reality," if it was to understand the world of its own phenomena. In both cases, the world beyond remains unrecognizable and scientifically unapproachable.

One may assume that these two areas of the "unknown" inhabit the same continuum of space and time, the same "unconscious." This suggests that certain phenomena of the physical and of the psychological world are actually two different facets of the same background; this has been suggested by Jung, notably in one of his later works, *Mysterium Coniunctionis*. Parapsychological manifestations are, as Jung has shown, related to archetypal constellations. They are thus connected with the background situations noted above; this is apparent from the fact that they cannot be explained in terms of the laws of time, space, causality, and the resulting relativity of matter. The basic questions raised by these facts are, in the final analysis, of concern to psychology as well as to physics. Their research touches upon the methodological and philosophical contradiction between the natural sciences and those of the humanities. It would seem that the decisive expansion of future knowledge may be found in this area.

The central question as to the nature of "spirits" and "apparitions" remains unchanged by the acknowledgment of an unrecognizable, not purely psychological background world, inasmuch as the thesis concerning the projection of psychological complexes can no longer be advanced with certainty. It remains questionable just what "spirits" really are, where they come from, and why and where they are observed. Jung expressed himself most carefully in his introduction to the German-language edition of Stewart Edward White's book *The Unobstructed Universe*:

"While, on one hand, our critical faculties doubt every individual case of spirit appearance, we are nevertheless unable to prove a single instance of the nonexistence of spirits. We must, therefore, limit ourselves in this respect to a verdict of *non liquet* [*non liquet*, a phrase which has its root in Roman law, literally means "it is not clear," and is used judicially in rendering a decision in a doubtful case].

One startling incident is related in the volume *Spuk*, by the late Swiss psychic researcher Fanny Moser. In it, Jung describes his encounter with a case of haunting in England, where, in 1920, he spent several weekends at the rented country home of a friend. During the nights he experienc several, increasingly violent haunting phenomena, such knocking, disagreeable odors, rustling, and drips. These p nomena gave him a somewhat uneasy feeling of slight a iety. The incidents were climaxed by the appearance, vision, of a solid-looking half of a woman's head, which a peared about half a yard from Jung on a pillow. One e seemed to be wide open and glared at him. The head dis peared and Jung lit a candle. He spent the rest of the ni sitting in an easy chair. Jung and his friend later discover that the house was known to be "haunted" and that tenants were sooner or later frightened away.

Jung regards this experience as an exteriorization of psychological content of his unconscious. However, it mained unexplained why this particular phenomenon sho have taken place in a specific room, of this particular hou while during the week days he spent in London, Jung's hea working schedule did not interfere with his ability to sle well and soundly. Thus, this was a case of what is known German as "*ortsgebundener Spuk*" (haunting tied to a pla rather than to a person), for which, to this day, no suffici scientific explanation has been found. Shortly after Jun visit the country house was torn down.

During the early 1920's, Jung participated in a number mediumistic experiments, together with the noted Germ physician and psychic researcher, Albert Baron v Schrenck-Notzing and the prominent Zurich psychiatrist Pr Eugen Bleuler, well-known for his concept of schizophren The experiments involved the Austrian medium, Rudi Schn der, and the participants observed apparent materializatio psychokinetic and other phenomena. Jung repeated these tempts in the 1930's; once again Prof. Bleuler was his coll orator, but other scientists were also present. The medi involved in these tests was known publicly only by his or abbreviated name, "O. Schl." Jung never utilized these expe ments scientifically. He wrote in his introduction to Whi book, "Although I have never done any notable origi research in this field, I do not hesitate to state that I have served a sufficient number of such phenomena to be co pletely convinced of their reality. They are inexplicable me, and I cannot therefore declare myself in favor of any the usual explanations of phenomena in this category."

One later development of Jung's parapsychological expe ments was recorded in the Swiss periodical *Neue Wiss* *schaft.* In a letter dealing with the mysterious fasts of a monk, Brother Klaus, at the Swiss village of Flüe, Jung does not exclude the possibility that the monk might have gained nourishment by parapsychological means. He considers the factor of heightened ionization of the air, at points where the body of a medium exudes ectoplasm. He adds that "nourishment may be absorbed by such means as the movement of living albumen molecules from one body to another." Jung notes, in this connection, that "in parapsychological experiments, losses amounting to several kilograms were registered during the occurrence of physical phenomena; in these instances, mediums as well as the members of the circle sat on scales, and their weight losses were thus recorded."

These rather brief references suggest that Jung participated in psychic experiments largely to widen his own direct experiences, in line with his scientific attitude as an empiricist. Thus he writes in his introduction to Mrs. Moser's book: "What we are dealing with is a vast and half-lit area, where nothing seems believable but everything is possible. Therefore, one must have observed a good deal personally, heard and read many stories, and if possible tested and questioned witnesses, before it is possible to arrive at a half-way solid judgment." This might well be the motto of Jung's work in the area of parapsychology.

The spaceless and timeless world of the unknowable does not only tempt the observer into any number of speculations and hypotheses about such things as spirits, but also about the "beyond" and life after death. Jung, personally, is of the opinion that a person would miss a great deal if he did not phantasize and speculate on this matter. He believes that man's life would be poorer and his old age more anxious—but, in addition, this would mean a break with spiritual traditions that began at the dawn of human culture; to ignore such traditional roots is something for which man may have to pay dearly. However, if a person forms opinions regarding death and the "beyond," he should keep in mind that he is entering the world of myths. And while this might be healthful and agreeable, it has nothing to do with science, or—as myths form the beginning of every scientific endeavor—it has *not yet* anything to do with science. In one of his works, *Memories, Dreams, Reflections,* Jung has an extensive chapter "On Life After Death," devoted to "phantasizing" or "myths." In his scientific writings, he expresses a few ideas on this subject, notably in "The Soul and Death" (*Collected*

Works, 8). The fact that the soul extends into a spaceless a
timeless sphere offers much room for speculation; it does n
however, allow for final conclusions.

One of Jung's last observations on this matter is contain
in a letter written in May, 1960. It supplements his ideas
the probability of life after death: insofar as the soul is ca
ble of telepathic and precognitive observations, it exists o
side of time and space; therefore, there might exist t
possibility of post-mortal phenomena which might be
garded as authentic. Jung writes:

"The relative rarity of such phenomena suggests, in a
case, that forms of existence within and outside of time a
so sharply separated that the crossing of this border offers t
greatest difficulties. That does not, in any way, rule out t
possibility that there is an existence outside of time that p
allels existence within time. Yes, we ourselves may simul
neously exist in both worlds, and only occasionally do
have an intimation of these conditions. However, what exi
outside of time is, in our opinion, unchangeable. It posses
relative eternity."

Of essentially greater significance than his researches
psychic phenomena, were Prof. Jung's studies in the questi
of acausal events, such as telepathic dreams, precognition a
the mantic method (including astrology, geometry, and ta
cards). On the basis of experiences with himself and his
tients, and incorporating the results of Dr. J. B. Rhine's wo
in extrasensory perception, Jung made a notable contributi
by introducing his concept of synchronicity to scient
thought. It corresponds to Jung's conscientious reluctance
scientific matters that he waited for more than twenty ye
before publicizing his definitive work on synchronicity.
first mentioned this concept in 1930, in an obituary of
friend Richard Wilhelm, published as an essay in *The Sec*
of the Golden Flower.

In the early 1920's, Jung came across a German tra
lation of the Chinese book of oracles *I Ching*. It fascina
him greatly, and he used it for the basis of divination expe
ments during a whole summer. At first he used a comp
method involving forty-nine yarrow stems, but later utili
coin oracles. He achieved positive results through these e
teric divination methods, and they confronted him with
insolvable problem of the so-called mantic method of cla
voyance. Shortly after discovering *I Ching*, he came to kn

Wilhelm. The Chinese oracular method and its usefulness became a main subject of their joint discussions. In his introduction to the English translation of *I Ching* (New York, 1950), Jung wrote:

"I am obliged to Wilhelm for the most valuable elucidations on the complicated problem of *I Ching*, as well as for the practical evaluation of the results gained. . . . When Wilhelm stayed with me at that time in Zurich, I asked him to work out a hexagram on the state of our psychological association. The situation was known to me, but not at all to him. The resulting diagnosis was startlingly correct and so was the prognosis, which described an event which occurred later and that I myself had not foreseen. To me, this result was however no longer very surprising, as I had previously had a series of noteworthy experiences with the method."

Jung did not avoid disconcerting questions created by the irrational mantic methods. He also did not explain away as mere coincidence the many remarkable links between real or psychological situations and the *I Ching* hexagram that emerged from the splitting of yarrow stems or the dropping of coins. He wrote: "The irrational richness of life has taught me never to disregard anything, even though it may violate all our (unfortunately so often short-lived) theories, or what may at first glance look completely inexplicable. These things are disturbing; but one cannot be sure whether the compass is pointing in the right direction—anyway, one doesn't make new discoveries in an atmosphere of security, certainty and restfulness. And that is the way it is with these Chinese methods of divination."

Jung even tended toward the opinion that the positive results of oracular clairvoyance were actually certain rhythms, which he at first described as an "unexpected parallelism between psychic and physical events." In this connection, he pointed toward astrology, notably the modern character horoscope, which hits its target because of the same parallelism. He felt that it is possible to define an astrological image of a human character on the basis of the place and hour of a person's birth, just as a wine expert may draw conclusions on the quality of a wine, purely on his knowledge of the region and year of vintage. However, the character—of man or wine—is thus dictated by the qualities of the moment. The same goes for the hexagram of *I Ching*, which is drawn by lots.

At first Jung had attempted to explain astrological co nections as examples of synchronicity—as acausal coi cidences between the constellation of stars and internal external human events. However, he studied the researc results of the noted physicist Max Knoll, specifically his lec ture on "Scientific Evolution in Our Time," which dealt wit planetary influences upon sun and earth. Consequently, Jun had to consider also the possibility of acausal relationship be tween planetary aspects and psycho-physiological condition this included the possibility of acausal explanation of astr logical results.

Jung has often been accused, because of his interest divination, and specifically in astrology, of being "unscien tific." Critics, however, have ignored that a psychologist, wh views the human soul with all its often astonishing facets as serious matter, cannot simply shrug his shoulders at any the remarkable manifestations of a rational or irration nature. Reading things in the stars is perhaps the oldest myt of mankind. The same goes for the idea that omens may found in the skies, as a sort of projection.

Jung said in a letter in June, 1960: "We must keep mind that we do not *create* projections, but that they happe to us. This permits the conclusion that our initial physic and particularly psychological insights may have been read the stars; in other words, whatever is farthest is actuall nearest. Somehow, as the Gnostics surmised, we have 'crysta lized' ourselves from out of the cosmos. It is for this reaso that in all their systems, up to the Manicheans, the idea of 'collection of the seeds of light' has played a leading role [The Manicheans followed the doctrines of Manes (21 276), a Persian who taught a religio-philosophical syste which included the concept that man's soul had sprung fro the Kingdom of Light and seeks escape from the body, from the Kingdom of Darkness.]

Astrology has at least as much to do with ancient myths it does with the stars; after all, a horoscope does not, becau of the precession of the vernal equinox, correspond to the a tual position of the stars. This would suggest that positi results, based on traditional astrological methods, are actuall synchronistic rather than causal phenomena. We are, ther fore, faced with a problem that eludes final solution.

One of Jung's works that preceded his concept of synchr nicity was published under the title *Aion*. It may even iewed as an astrological work, as it is designed to point out meaningful coincidence between the astrological cosmic onth of the fish and the spiritual development of Christian-y (Christus=Ychtys=Fish). This cosmic month began 2,000 ears ago and is to be succeeded by the cosmic month of hich the Waterbearer is the symbol. The parallel develop-ent between such cosmic events—the movement of the pring equinox through the double sign of the fish—and vents of a spiritual-historical nature, has fascinating implica-ons. In the year 1000, at approximately the same time as e second fish was reached, the movements compensating hristianity began, but also the undermining pressures of the ogumiles, Purgers, Albigensians, Waldensians, the poor in pirit, the brothers of the free spirit, Beguines, Beghards and e Holy Ghost movement of Gioacchino da Fiori. Although e end of the world did not occur, in 1000, there began ecretly "the kingdom of the second fish," namely of the An-christ, whose climax, no one will gainsay, we are now eing.

Cosmic-historical parallels of this kind, such as coin-idences between the outer and the inner in isolated life, such s true dreams, warnings, or precognitions, explode the "sen-ble" or rational universe. For the person who knows that ere is only *one reality*—the one world of the alchemists, the pace-time continuity with all its facets—the experiences of ynchronistic phenomena are exceptional events, but they can e acknowledged as meaningful and taken for granted.

The method with which Jung approached parapsychologi-al phenomena was, above all, careful observation. Moreover, e leaned heavily upon the statistically computed results of e Rhine experiments. In the field of astrology, he not only arried through a statistically evaluated experiment, but more ften called for statistical investigations. But in general, statis-cs, to Jung, were rather secondary. In his preface to Mrs. oser's book he writes:

"One can, to be sure, with the help of a statistical method rove the existence of such (synchronistic) effects with more an sufficient certainty, as Rhine and other researchers have one. But the individual nature of the more complex phe-omena of this sort forbids the employment of the statistical ewpoint, as it is itself complementary to synchronicity and ence destroys the latter phenomenon, so that it eliminates it s a likely occurrence. We are, therefore, in this regard completely dependent upon the well-observed and certified vidual case."

When Jung, in 1930, wrote his obituary of Richard helm, the concept of synchronicity was evolving in his r as a scientific principle. He wrote:

"A few years ago, the then president of the British Ant pological Society asked me how I could explain how an i lectually outstanding people like the Chinese had faile create a science. I replied that this must be an optical sion, since the Chinese possessed a 'science,' of which standard work was *I Ching*, but that the principle of science, like so much else in China, was quite thoroughly tinct from *our* scientific principle. The science of *I Chin* not founded on the causal principle, but on a hitherto named—since it had not reached us—principle, which I perimentally had designated as 'synchronistic principle.'

These sentences are not only interesting with regard to development of Jung's thoughts, but because they show the concept of synchronicity acts as a bridge between wes and eastern thinking—just as it links natural and scien thought. This is no accident as, whenever thinking is pus to the boundary of the "background," the collective unc scious, things have lost their simple meanings and lin thinking stops. The truths, which then matter, may thus recorded chiefly in paradoxes. Only in time and space c the unintelligible divide itself into antithesis of the und standable and causally arranged "one" or "other." Synch nistic phenomena have indeed, so to speak, to do with background; therefore, they seem paradoxical, surrounded a puzzling way by the psychical and physical; and theref they rouse the feeling of the Divine.

Parapsychology is not the only "off-beat" area to which G. Jung turned his attention. One should recall the abstr obscurities of alchemy, which he clarifies; the much-ridicu appearance of Unidentified Flying Objects, which he und took to study, and the problems of the Evil and of Unconscious, with which he has dealt. The world underg change and development, not through what is already kno but by throwing light upon the unknown. It is in this man that Jung has made—not the least through his investigati in the field of parapsychology—a significant contribution the greater self-knowledge of our time.

20541

THE PSYCHOLOGICAL FOUNDATIONS OF BELIEF IN SPIRITS

C. G. Jung

The interest which Professor Jung (1875–1961) took in psychical phenomena can be traced to readings in early life, as well as to a series of personal experiences. These have been narrated by Mrs. Jaffé in the preceding paper. Jung's spiritualistic experiments used his cousin, Helene Preiswerk, as medium and formed the basis for his doctoral thesis, "On the Psychology and Pathology of So-Called Occult Phenomena" (1902). The paper reprinted here was read by Jung at the General Meeting of the Society for Psychical Research, London, on July 4, 1919. His elucidation of the role played by "autonomous complexes" is, presumably, partly based on Jung's personal experiences, culminating in 1916 with a eeming encounter with spirits of the dead; he later referred o them as "the voices of the Unanswered, Unresolved and Unredeemed." This paper appeared in the Proceedings of the Society for Psychical Research *(Part LXXIX, May, 1910).*

If we look back into the past of mankind, we find—among many other religious convictions—a universally spread belief n the existence of phantoms or ethereal beings dwelling in he neighborhood of men, and influencing them invisibly, yet very powerfully. These beings are frequently supposed to be the spirits, or souls, of the dead. This belief is to be met with among most highly civilized men, as well as among Australian negroes who are still living at the level of the paleolithic age. Among Western peoples, however, belief in the influence of spirits has been counteracted by the development of natural science and intellectual criticism during the last 150

years, so that among the educated of today it has been al
completely suppressed together with other ultrascientific
victions.

But just as these latter beliefs still exist among the ma
belief in spirits also is far from being entirely extinguis
The “haunted house,” for instance, has not yet disappe
from the most businesslike or intellectual cities, nor has
peasant yet ceased to believe in the bewitching of his c
On the contrary, a recrudescence of belief in spirits occu
even in an age of materialism, which is the inevitable co
quence of intellectual enlightenment. It was not a
crudescence of obscure superstitions, but of an interest i
essence scientific, an intense desire to direct the searchlig
truth on to the dark chaos of facts. The illustrious name
Myers, Sidgwick, Gurney, Wallace, Crookes, Zoellner
many other prominent men are associated with the re
and the rehabilitation of the ancient belief in spirits. Ev
the real nature of the observed facts be disputed, even i
explorers may be accused of errors, and sometimes of sel
ception, there still belongs to them the immortal merit of
ing thrown the whole of their authority on to the sid
nonmaterial facts, regardless of public disapproval.
faced academic prejudices and did not shrink from the c
derision of their contemporaries; even at a time when th
tellect of the educated classes was spellbound by the
dogma of materialism, they drew public attention to phen
ena of an irrational nature, contrary to accepted conviction

These men typify the reaction of the human mind ag
the senseless and desolating materialistic view. Consid
from the standpoint of history it is not to be wondered at
so-called spiritual phenomena should be used as an effi
weapon against the mere testimony of the senses, because
lief in spirits has always been a defense against mere se
tionalism. This is the case with the primitive man, w
complete dependence upon nature makes concrete circ
stance of the greatest importance for him. One must rem
ber the manifold distresses and needs of his life, pl
amongst hostile neighbors and dangerous animals, and c
harrowed by a merciless nature. His keen senses, his cupi
his deficient self-control, all expose him to adverse ex
ences. Hence he is always in danger of losing that mystic
supernatural something which alone makes man a man.
his belief in spirits, or rather in the spiritual, delivers
from the fetters of a merely tangible and visible world a

nd again. It is this irrational function that forces on him the ertainty of spiritual reality, whose laws and demands are to e followed as carefully and as conscientiously as those relat- g to physical nature. Primitive man really lives in two orlds. This concrete world is for him at the same time a iritual world. The objective world is undeniable, and for m the spiritual world has an equally positive existence. This not only his opinion, but rather a naïve perception of iritual phenomena, projected from his unconscious onto the oncrete object. Wherever such naïveté is lost through the isillusioning touch of contact with Western civilization and s disastrous "enlightenment," then also his feelings of awe in elation to the spiritual law disappear, and consequently he egenerates. Even Christianity cannot save him from degener- tion, because in order to have a beneficial effect on man, uch a highly developed religion demands a highly differenti- ted psyche.

Thus "spiritual" phenomena are for the primitive an imme- iate experience of an ideal or spiritual reality.

If it be asked, what are primitive "spirit" phenomena, we ay answer that *the seeing of apparitions* is the most fre- uent phenomenon. It is generally assumed that this seeing of pparitions is commoner among primitives than among civ- ized people, and that it is due to nothing but superstition. It generally held that educated people do not have such isions, unless they are ill. It is quite certain that civilized an makes use of the hypothesis of "spirits" incomparably ss frequently than the primitive. In my view, however, and ccording to my experience as a physician, the psychological henomenon which the primitive attributes to a spirit is quite s common among civilized men. The only difference is that here a primitive speaks of ghosts, the European speaks of reams and phantasies and neurotic symptoms, and attributes ss importance to them than the primitive does. He gives hem too little weight, and on account of this undervaluation e European regards many things as morbid which, under nother aspect, would be highly interesting and highly impor- ant. Therefore, owing to this rationalizing, what are living ntities for the primitive become for him morbid symptoms. en's perceptions are the same as they always were, but we nterpret them in a different way, and the modern way enfee- les them, making an incomprehensible illness of them. But e psychological fact in itself is not invalidated by a modern nterpretation. If, indeed, a highly civilized and enlightened

European is obliged to live in primitive conditions for a time, it often happens that he has some unusual experie which defy a rationalistic interpretation.

One of the essential determinants of belief in spirits is *dream*. Persons appear in most dreams, and the primitive lieves them to be spirits or souls. The dream has for hin incomparably higher value than for a civilized man. H usually a good deal taken up with his dreams; he talks m of them and attributes an extraordinary importance to th When he talks of his dreams he is frequently unable discriminate between them and actual facts. They are q real to him. A competent explorer of primitive psycho says: "*Le rêve est le vrai dieu des primitifs.*" To the civil man, as a rule, dreams appear to be valueless; yet there some individuals who attribute a high importance to them least to particularly weird and impressive dreams. Such pressive dreams make one understand why the primi should suppose them to be inspirations. It is of the essenc an inspiration that there must be something that inspire spirit or a ghost, although the modern mind would not d such a conclusion. The appearance of the dead in a dr seems a particularly strong argument for the primitive b in spirits.

Further grounds for belief in spirits are found in chogenic nervous diseases, especially those of a hyster character, which are not rare among primitives. As such t bles arise out of psychological conflicts, mostly of an un scious order, they appear to the naïve mentality as if ca by certain persons, living or dead, who are in some way nected with the individual's conflict. If the person is dead, assumption that his spirit is persecuting the living is easily rived at. As the origin of pathogenic conflicts frequently back to early childhood and is connected with memorie the parents, it naturally follows that the spirits of relatives particularly revered or feared by primitives; hence ance worship is universally spread. Worship of the dead, in first place, is undertaken as a protection against their mal lence. Experience in the psychological treatment of ner patients shows again and again how great the influence o parents is, even when they have been long dead. The psy logical after-effects of the parents are so important for a dividual's fate that one can easily understand the signific of ancestor worship.

Mental diseases have also great influence in causing b

spirits, particularly those which are accompanied by hallu-
nations, either of a delirious or catatonic character, belong-
g chiefly to the Dementia praecox class, which is the
mmonest form of mental disorder. Always and everywhere
sane persons have been regarded as possessed by evil spirits,
d this belief is supported by the patients' hallucinations.
e patients are less tormented by their visions than by the
ices they hear. The voices are often those of relatives or at
ast of people connected with the patient's psychological
nflicts. It is also fairly common to hear the voice of God or
the devil. It appears, of course, to the naïve mentality that
ch voices come from spirits.

When speaking of belief in spirits of the dead reference
ust also be made to belief in souls of the living, the latter
elief being a correlate of the former. In the primitive con-
iction the ghost is generally the spirit of a dead person,
ence it must before have been the soul of a living person.
his at least is held where the belief that man has only one
ul prevails. But man is frequently supposed to have two or
ore souls, one of which is more or less independent and
latively immortal. In such a case the "spirit" of the dead is
nly one of the several "souls" of the living. Hence it is only
part of the psyche—a psychical fragment, as it were. Thus
elief in souls is an almost necessary condition of belief in
irits, at least so far as the spirits of the dead are concerned.
he primitive is convinced that there are not only such spir-
s, but also elementary demons, who are not believed to have
ver been human souls or psychical fragments of them.

Before discussing the grounds for belief in souls I wish to
um up the facts already mentioned. I have pointed out three
ain sources of the belief in spirits which are accessible to
ience: viz. the seeing of apparitions, the phenomenon of the
ream, and the pathological disorders of the psyche.

The commonest of these grounds of belief is the dream.
hat does modern science know of the dream? A dream is a
sychological product originating in the sleeping state without
nscious motivation. In a dream, consciousness is neither
lly awake nor fully extinguished; there is still a small
mount of consciousness. There is, for instance, nearly always
me consciousness of the ego, but rarely of the ego as it
ppears to a consciousness fully awake. It is rather a limited
go, sometimes peculiarly transformed or distorted. The
ream-ego is, as a rule, a mere fragment of the conscious
go. The ego is a psychic complex of a particularly solid

kind. As sleep is seldom dreamless, we may assume that complex of the ego rarely ceases to be active. Its activi but restricted by sleep. The psychic contents of the dream pear to the ego just like those external phenomena which pear to it in the waking state. Hence it happens that we ourselves in situations like those in real life, but rarely cise thought or reason about them. As in our waking things and human beings enter our field of vision, so in dream, psychic contents, images of different kinds enter field of consciousness of the dream-ego. We do not feel we were producing the dreams, but rather as if they cam us. They do not submit to our direction, but obey their laws. Obviously they are autonomous complexes, which themselves by their own methods. Their motivation is un scious. We may therefore say that they come from the un scious. Thus, we must admit the existence of indepen psychic complexes, escaping the control of our conscious and appearing and disappearing according to their own From our waking experience we are convinced that we duce our thoughts and that we can produce them when wish. We also think we know where our thoughts come f and why, and to what end we have them. If it should ha that a thought takes possession of us against our will, or unexpectedly disappears against our will, we feel as if s thing exceptional or morbid had happened. It seems as i difference between the waking and the sleeping states extraordinary. In the waking state the psyche is appar controlled by our conscious motivation, but in the slee state it seems to produce strange and incomprehensible i which force themselves on us sometimes quite against ou tention.

Similarly the vision comes like a dream, but in the wa state. It enters consciousness concurrently with the percep of real objects, being an emergence of unconscious ideas the continuity of consciousness.

The same phenomenon takes place in mental disease. ear does not only perceive the vibrations of sound, but it seems to hear thoughts, which are not the immediate con of the conscious mind.* Besides the judgments made by i lect and feeling, opinions and convictions arise forcing th selves upon the individual, apparently based upon percept but in reality derived from unconscious ideas. Such are delusions.

---

* There are also some exceptional cases where the voices lo repeat the conscious thoughts of the individual.

These types of phenomena—dreams, waking visions and mental disease—depend on the fact that the psyche as a whole is not an indivisible unity, but a more or less divided otality. Although the separate parts are connected with each other, they yet are relatively independent of each other. Their ndependence extends so far that certain of the psychic fragments are very rarely, or perhaps never, associated with the ego. I have called those fragments autonomous complexes, and I founded my theory of complexes upon their empirical existence. According to this theory the ego-complex forms the center of our individuality. But the ego-complex is but one among several complexes. The other complexes are more or ess associated with the ego-complex and thus far they are conscious. But they also can exist for some time without being associated with the ego-complex.

A striking and well-known example thereof is the conversion of St. Paul. Although the moment of a conversion seems sometimes quite sudden and unexpected, yet we know from repeated experience that such a fundamental occurrence always has a long period of unconscious incubation. It is only when the preparation is complete, that is to say, when the individual is ready to be converted, that the new view breaks forth with great emotion. St. Paul had already been a Christian for a long time, but unconsciously; hence his fanatical resistance to the Christians, because fanaticism exists chiefly n individuals who are compensating for secret doubts. The ncident of his hearing the voice of Christ on his way to Damascus marks the moment when the unconscious complex of Christianity became conscious. That the auditory phenomenon should represent Christ is explained by the already exsting unconscious Christian complex. The complex, being unconscious, was projected by St. Paul on to the external world as if it did not belong to him. Unable to conceive of himself as a Christian, and on account of his resistance to Christ, he became blind. and could only regain his sight hrough submission to a Christian, that is to say, through his complete submission to Christianity. Psychogenic blindness is, according to my experience, always due to an unwillingness o see, i.e., to understand and to accept, what is incompatible with the conscious attitude. This was obviously the case with St. Paul., His unwillingness to see corresponds with his fanatical resistance to Christianity. This resistance was never wholly extinguished, a fact of which we have proof in epistles. It broke forth at times in the fits he suffered fro is certainly a great mistake to call his fits epileptic. The no trace of epilepsy in them, on the contrary, St. Paul hi in his epistles gives hints enough as to the real nature of illness. They are clearly psychogenic fits, which really me return of the old Saul-complex, repressed through convers in the same way as there had previously been a repressio the complex of Christianity.

Science does not allow us consistently with intellectual esty to explain the case of St. Paul on supernatural grou We should be compelled to do the same with many si cases within our medical experience, which would lea conclusions antagonistic both to our reason and feeling.

Autonomous complexes appear in dreams and vision pathological hallucinations and delusions. Being strang the ego they always appear as if externalized. In dreams, are often represented as other persons; in visions, they visibly projected into space; the same is the case with vo in insane people, insofar as they are not ascribed to per in the patients' surroundings. Ideas of persecution are often associated with persons to whom the patient attrib the qualities of certain of his unconscious complexes. The tient feels these persons to be hostile because his ego is ho to the unconscious complex, just as Saul resented the com of Christianity which he could not acknowledge. He p cuted the Christians as representatives of his unconsc complex.

“Spirits,” viewed from this standpoint, are unconscious tonomous complexes which appear as projections bec they are not associated with the ego.

I mentioned before that belief in souls of the living logical correlate of belief in spirits of the dead. Whilst sp are felt to be strange and incompatible with the ego, seem to belong to it. The primitive feels the proximity or influence of the spirit as something disagreeable or dange or uncanny, and he is much easier in his mind when the s is banished. It is otherwise with the loss of a soul, which to him like an illness, and he may also attribute phy illness to the loss of a soul. Children may not be beaten cause their souls, if outraged, might withdraw from them the soul is something that seems normally to belong to a but the spirits seem to be something that normally should be near him. He avoids visiting “haunted” places and to ng things supposed to be inhabited by spirits, unless he is doing so for purposes of magic.

The plurality of souls is a plurality of relatively autonomous complexes like the plurality of spirits. The soul complexes seem to belong to the ego and the loss of them appears morbid; on the contrary, the spirit complexes ought to be separate from the ego. Their association with it means illness, and their dissociation from it means healing. Thus primitive pathology knows two causes of illness, namely, the loss of a soul and the possession by a spirit. According to these primitive beliefs we may postulate the existence of certain unconscious complexes which normally belong to the ego, and certain others which normally do not belong to it, i.e., which ought to remain wholly unconscious. The former are the soul complexes, the latter the spirit complexes.

This discrimination, current among primitives, corresponds exactly to my theory of the unconscious. According to my view, the unconscious is divided into two spheres. One of these is what I call the *personal* unconscious. It includes all those psychic contents which are forgotten during the course of life. Their traces still exist in the unconscious, even if their conscious reproduction has become impossible. Moreover, the personal unconscious contains all those subliminal impressions or perceptions which have too little energy to reach consciousness. The unconscious combinations of representations belong thereto, insofar as they are too feeble and indistinct to become conscious. Finally, the personal unconscious includes all psychic contents which are incompatible with the conscious attitude. As a rule this involves a whole group of psychic contents. These contents appear to be inadmissible above all on account of their moral, aesthetic, or intellectual deficiency. A man cannot always feel and think in a beautiful, good and true way, and in trying to keep up an ideal attitude everything inconvenient is automatically repressed. If one function, for instance thought, is especially developed and is dominating the conscious, then the function of feeling is naturally repressed and falls therefore into the unconscious.

The other part of the unconscious is the *super-personal* or *collective* unconscious. The contents of the collective unconscious are not personal but collective; i.e., they do not appertain to one individual only, but at least to a group of individuals and as a rule to a whole nation, and finally to the whole of mankind. The contents of the collective unconscious are not acquired during an individual's life, but are congeni-

tal instincts and primordial forms of apprehension, the
called archetypes or ideas. Although the child possesses
congenital representations, it yet possesses a highly develo
brain with possibilities of functioning in a definite way.
brain is an ancestral inheritance. It is the organic result of
psychic and nervous function of the whole ancestry of m
Thus the child brings into life with him an organ ready
function in the same way that it has functioned through
previous ages. There in the brain are the pre-formed insti
and also the primordial types or images, the foundati
upon which mankind has always formed his thought
feeling, which includes the whole wealth of mythological
tives. It is, of course, not easy to prove the existence in a r
mal man of the collective unconscious, but there are obvi
traces of mythological images, at least in his dreams. The
istence of a collective unconscious is more easily disclosec
certain cases of mental derangement, especially in Demen
praecox. There one sometimes meets with an astonishing
velopment of mythological imagery. Certain patients
velop symbolic ideas which can never be accounted for
the experience of their individual life, but only by the hist
of the human mind. What is displayed is a sort of primi
mythological thinking producing its own primordial fo
unlike normal thinking, which makes use of personal exp
ence.

The personal unconscious contains complexes belongin
the individual which form an indispensable part of his
chic life. When any complexes which ought to be associa
with the ego become unconscious, either by repression. or
decrease of their potentiality, the individual has a feeling
loss; when a lost complex again becomes conscious, for
stance by psychotherapeutic measures, he experiences an
crease of psychic energy. The cure of neurosis is o
effected in this way.

When, on the contrary, a complex of the collective unc
scious associates itself with the ego, the individual
impressed by the strangeness of these contents. They are
to be uncanny, supernatural and often dangerous. They
sometimes be felt as helpful interventions of supernat
powers, but more often as injurious influences of a mo
nature, and these result in actual physical illness, or psy
alienation from normal life. An individual's consciousnes
always altered by the association of contents which ou
normally to remain unconscious. If the physician succeed

emoving such a morbid association from consciousness, the atient feels as if relieved from a burden. The sudden inusion of such strange contents often takes place in the early ages of Dementia praecox. Patients encounter queer oughts, the world seems changed, people appear to have range and distorted faces, etc.

While the contents of the personal unconscious are felt to elong to one's own psyche, the contents of the collective nconscious appear to be strange to one's own psyche, as if ey came from outside. The reintegration of a personal comlex has the effect of relieving and often of healing; whereas e intrusion of a complex of the collective unconscious is a isagreeable and even dangerous phenomenon. It appears to ave a supernatural quality; in other words, it is accompanied y a feeling of awe.

The parallelism of this theory with the primitive belief in ouls and spirits is clear. Souls correspond to the complexes f the personal unconscious, and spirits to those of the collecve unconscious. The scientific standpoint gives the prose of he matter when it calls the awful and revered beings that inabit the shadows of the primeval forests "psychological comlexes." But if we consider the extraordinary role played by elief in souls and spirits in the history of mankind, we canot be content with the mere statement of the existence of uch complexes; we must study the nature of these complexes urther.

The existence of complexes is easily demonstrated by eans of the association experiment. This experiment consists f a very simple procedure: the experimenter calls out a word o the test-person and the test-person immediately replies with he next association coming into his mind. The reaction-time, e., the lapse of time between the stimulus word and the rely, is measured by a stopwatch. One would expect all simple ords to be followed by an equally short reaction-time, and ll difficult or rare words to cause a prolonged reaction-time. ut as a matter of fact, the reaction-times differ far less on his than on other accounts. Some very long reaction-times re unexpectedly produced by very simple stimulus words, nd in the same case there may be no delay in replying to uite unusual stimulus words. Through careful examination f the test-person's individual psychology, I discovered that a rolongation of the reaction-time is usually due to interfernce by a feeling associated with the stimulus word or with he reply. The feeling itself always depends upon the fact that the stimulus word has struck a complex. Prolongation o reaction-time is not the only symptom that discloses the tence of a complex. There are many others which I ca now enumerate.

The complexes revealed by means of the association periment usually concern things which the test-person w prefer to keep secret; often things of a painful nature whose very existence he is unconscious. When a stim word strikes a complex, the test-person may have no ass tions at all, or a superabundant supply of them, so choice is momentarily impossible. Hence we see that turbed reactions are indicated in many ways other than prolongation of time. Moreover, if, having completed series of tests, we ask the test-person to repeat the answe gave, we find that the normal reactions are rememb while those connected with the complex are easily forgo

The properties of the autonomous complex can be sum up from these facts. The complex creates a disturbanc mental reaction; it delays or distorts the reply; it produce inconvenient reaction, or it suppresses the memory o former reply. It interferes with the conscious and inter our intentions; therefore we call it autonomous. When w the experiment on a neurotic or insane person, we disc that the complexes disturbing the reactions belong in fa the main content of the psychic derangement. These plexes not only disturb the experimental reactions, bu also determinants of the morbid symptoms. I have exam cases where the test-person replied to specific stimulus w with incoherent and apparently meaningless words, brea out against his conscious intention, as if a strange being spoken through him. Such words belong to the uncons complex. Complexes when excited by external stimuli produce sudden confusion, or violent emotion, depres anxiety-states and all sorts of mental disturbances. Comp behave just like independent beings, so that the primitive ory of spirits seems an excellent formulation for them.

We may carry this parallel further. Certain complexes on account of painful experiences in a person's life, ca psychic wounds which may not heal for years. It often pens that a painful experience suppresses certain vital ties in an individual. Then a personal unconscious comp originated. The primitive might appropriately regard it loss of a soul, for indeed certain parts of the psyche hav appeared. A great number of complexes arise in such a wa

But there is another no less important source of complexes, ad while the one just described is easily comprehensible, nce it concerns the conscious life, the other is obscure and fficult to understand, since it has to do with perceptions and npressions of the collective unconscious. Usually the individ- al does not realize that such perceptions are derived from e unconscious; rather, it seems to him as if they were due external and concrete facts. He thus rationalizes internal npressions of an unknown nature. But they are really irra- ional and ideal contents of his own mind, of which he was ever before conscious; they are not due to any of his exter- al experiences. Primitive language expresses such facts not aptly when it describes them as invisible ghosts approaching an from the other side, namely, from the world of shadows. t seems to me that impressions of this kind arise when grave xternal occurrences shake the individual to his very founda- ons, so that his whole previous attitude breaks down, or hen certain contents of the collective unconscious obtain uch an excess of energy that they are able to influence the onscious.

This may also take place when the life of a nation or of a rge group of human society undergoes a profound change f a political, social or religious nature. Such a change in- olves a transformation of the psychological attitude. Changes n history are generally attributed to external causes. But I old the view that the greatest changes in human history are o be traced back to internal causal conditions, and that they re founded upon internal psychological necessity. For it ften seems that external conditions serve as mere occasions n which a new attitude long in preparation becomes mani- est. The development of the Christian era is an example of his. Political, social, and religious conditions influence the un- onscious, since all the factors which are suppressed in the onscious religious or philosophical attitude of human society ccumulate in the unconscious. This gradual accumulation neans a gradual increase of the energy of the unconscious ontents. Certain individuals gifted with particularly refined ntuition become aware of the change going on in the collec- ive unconscious and sometimes even succeed in translating heir perceptions of it into communicable ideas. The new deas spread more or less rapidly in proportion to the reparedness and readiness in the unconscious of other eople. In proportion to the more or less universal uncon- cious preparation people are ready to accept new ideas, or else to show particular resistance to them. New ideas are only the enemies of old ones, but they also often appear i extremely unacceptable form.

Whenever any contents of the collective unconscious come animated, the conscious feels disturbed, more ofte appears, in a disagreeable than in an agreeable way. may be due to the fact that disagreeable experiences al make a greater impression than agreeable ones. In any animation of the collective unconscious creates a certain fusion in the conscious. If this animation is due to a com breakdown of all conscious hopes and expectations, the ger arises that the unconscious may take the place of scious reality. Such a state is morbid. We actually something of this kind in the present Russian and Ger mentality. An outbreak of violent desires and impos phantasies among the lower strata of the population is a gous to an outburst from the lower strata of the unconsc in an individual. In the case of Russia and Germany wha see is the visible and concrete collapse of two great natio

But animation of the unconscious may begin from wi in the absence of a definite external catastrophe. In su case it is due to the gradual development of a new psych ical attitude in the depths of a nation's mentality. Thus, i epoch of worldliness and materialism an idealistic atti may slowly develop in the unconscious. For example, evolution of Christianity was not due to the collapse o Roman empire. It originated at the time of the Pax Rom during the epoch of the Empire's greatest splendor power. Such a new era is conditioned by developments are taking place practically in everybody, that is, by a pr in the collective unconscious. In everybody at such a unconscious energy disturbs the conscious, but the indivi in such a case does not consider himself ill, because he i different from his fellow beings. He simply takes part collective transformation, whose origins and aims re unconscious. The individual may be unhappy and distre and probably has genuine reasons for his sadness, for s and political conditions will suffer greatly from the fu mental changes going on. He will not, however, have the ically morbid feeling of one whose unconscious bec disturbed on account of painful experiences of an indiv nature.

The animation of the collective unconscious does n ways create disturbances, for it may also work benefic it always carries with it something of a supernatural char- er. Owing to this the effect of the collective unconscious is ays beyond the grasp of man. At one time it helps, at an- er time it destroys him. It is never to be relied upon. refore primitive man is especially subject to the fetters of unconscious. Yet among primitive civilizations we already attempts to conjure the supernatural power and influ- es of the unconscious. Amongst primitives there are pecu- ly intuitive individuals, sometimes of superior intelligence, nely, sorcerers. They are supposed to know how to handle nons. In history the primitive tribal sorcerer is the man o originates psychological methods and teachings which at domination of the supernatural. The rites and legends invents represent qualities of the unconscious as he con- ves of them. Thus he translates some inner experiences o human language and creates the foundations of the his- y of the human mind. Our intellect is born from mythol- , and mythology is nothing but a translation of inner erience into the language of pictures. Thus spirits are nsformed into mind.

A well-known instance of the spirit translated into lan- ge and teaching is the miracle of Pentecost. To the Gen- s the apostles seemed in a state of mental confusion, ause they were under the influence of the spirit, viz. a enomenon of the collective unconscious. But from this e they derived the words, the images and the power to ch the world. Through the translation of unconscious con- ts into comprehensible language, the power of the spirit, in er words, the energy of the unconscious complex, becomes nsformed into a powerful idea, which enables the human nd to free itself from the fetters of demoniacal influences.

As souls are parts of the individual psyche, so spirits are rts of the collective psyche. Souls are complexes split off m and lost to the conscious; spirits are complexes of the lective unconscious, which replace a lost adaptation to re- y, or which compensate for the inadequacies of large ups of men.

What are regarded as spirits of the dead are psychologi- ly created in the following way: When an individual dies, psychological attachment of his relatives' feelings is cut . The attachment represents the application of a certain antity of psychic energy. When the application of this en- y becomes impossible, through the death of its object, re only remains the idea or image of the dead. The energy is now applied to this image, and when the attachme been intense, the image remains alive and forms a spi the spirit takes away a certain amount of energy fro life, he may be injurious. Primitives, therefore, frequent that when a man dies he changes his character in an un able way and seeks to do as much damage as he can living. Obviously this opinion originates in the fact persistent attachment to a dead person makes life see worth living, consequently less worthy of effort.

I have given you an outline of a conception of the problem from the viewpoint of modern psychology. confined myself to the limits of science and have pur avoided the question whether spirits are real or concre jects, and whether their independent existence can be concretely. I avoid this question not because I regard it tile, but because I am not competent to discuss it f scientific standpoint, having no evidence in my posses think you are as conscious as I am of the fact that it i difficult to find reliable evidence for the independent a jective reality of a spirit. The usual spiritistic proofs are as a rule nothing but psychological products, dep upon the unconscious of the percipient. Even the so physical effects always depend upon the cooperation percipient and seem to be exteriorized effects of uncon complexes. I am personally convinced of the reality o facts, but I cannot accept them as evidence for the in dent reality of spirits.

These phenomena form a special chapter in psych Science must, I think, confine itself to the limits of cog for science is essentially intellect; it means the applica one undoubted psychological function, namely, though intellect is only one among several psychological fun and therefore does not suffice to give a complete pict the world. Feeling, for instance, which is another psyc cal function, sometimes arrives at different conviction those of intellect, and we cannot always prove that th victions of feeling are necessarily inferior to those of tellect. We have also subliminal perceptions, which are the disposal of the intellect, and which, therefore, are in a merely intellectual picture of the world. So we mu mit that our intellectual conceptions are deficient so fa complete comprehension of the world is concerned. Bu make use of intellect, as is the case in science, we have to apt ourselves to the demands of intellectual criticism, and must limit ourselves to the scientific hypothesis so long as re is no reliable evidence against its validity.

THE “LAYING ON OF HAND
IMPLICATIONS FOR
PSYCHOTHERAPY, GENTLIN
AND THE PLACEBO EFFEC

Bernard Grad

Dr. Grad, McGill University, Montreal, took the co of interpersonal elements in healing out of the purely h setting by extending it to animals (mice) and plants (b seeds). In this manner, elements of suggestion and elusive interpersonal variables were presumably exclude Grad's experiments led him to observe that saline held i hands of some people and poured over plants stimulated growth. Ultimately, using spectrophotometry he detec change in the saline itself. On this research road, he proceeded over a period of many years; this paper marizes earlier work. It appeared originally in the Jo of the American Society for Psychical Research *(Vol No. 4, October, 1967). Copyright © 1967 by the Ame Society for Psychical Research, Inc.*

Introduction

In early historical times, healings allegedly produced b laying on of hands and related procedures were largel sponsible for the growth of many cults and especially fo of the early Christian church. However, this kind of a ance greatly diminished in subsequent centuries during time society as a whole was either indifferent or conde tory. Such attitudes continue to the present time. Medic cieties view all such phenomena as quackery and ascrib pparently favorable results obtained by such means as due to ggestion. Not long ago, however, suggestion itself was not ccepted by the scientific community; yet at the present time is considered worthy of serious study. Again, at one time l folk therapies were deemed worthless by scientific authories; yet curare, quinine, digitalis, reserpine, chaulmoogra, nd the psychedelic drugs have such an origin,[20] as does also e practice of variolation.

The reason why the laying on of hands was and is not reeiving attention from the scientific community cannot be ue to the lack of biomedical procedures for investigating this roblem, for these have long been available. The problem ay reside in the very simplicity of the procedure of the layng on of hands, causing it to be overlooked or dismissed. nother problem may be the belief that the person with the ealing gift (if one accepts this possibility) and the mounteank cannot be distinguished in their practice of this "ritual." However, if the so-called healer can really heal, this should e obvious from the results obtained under carefully conrolled conditions. What is required are experiments designed o answer the question whether there is any truth in the claim hat some persons can accelerate the processes of healing by uch means and, if so, to try to understand the mechanisms hereby this phenomenon occurs. From such studies, it might e possible to develop tests which would distinguish persons ith the gift from those without it; and more importantly, it ight provide information basic to some aspects of the ealing art, namely, psychotherapy and the so-called placebo ffect.

With this in mind, a series of experiments was undertaken ith a man, Mr. E, who claimed to possess the power to heal y the laying on of hands. In the first experiments, skin ounds were made on the backs of mice, some of which ere subsequently treated by Mr. E simply by having the ice in suitable containers placed between his hands for two ifteen-minute periods daily, five and a half days per week, ntil the wounds were healed twenty days after they were ade. Control mice were placed in similar containers and eiher were left untreated or were treated in the identical maner of Mr. E, but by persons making no claim to a healing ift. The results showed that the rate of wound healing was ignificantly faster in the group treated by Mr. E than in the ther two groups. The experiments have been described in detail elsewhere.[15, 16] [Subsequently, the identity of “Mr. became known as that of Hungarian-born Oscar Estebany

Having shown that it was possible to obtain significant celeration in wound healing by the laying on of hands, next problem was to make attempts to learn something of underlying mechanisms. For this, a more rapid assay was quired than the wound healing technique, which took weeks to complete, two of which were involved in prep tions before wounding the animals. Therefore, experim were undertaken involving the growth of barley seeds. T duration, including the preparatory period, was about that of the wound-healing experiments. In the plant exp ments also, significant acceleration of growth was observe those plants treated by Mr. E as compared with controls detailed description of the techniques involved in the p experiments, including the way in which the plants treated, was given in earlier reports.[13, 14] However, it m be stated here that the significant stimulations in plant gro were obtained when Mr. E held in his hands, for thirty utes, the vessels containing the solutions with which his pl were later watered, and such results were obtained not when the solutions were treated in open beakers, but als closed reagent bottles. The laying on of hands directly on plants themselves was found to be unnecessary to ach significant stimulation, thereby simplifying the problem of double blind utilized in these experiments. The experim with Mr. E were reviewed in a recent publication.[15]

Following these studies, the question naturally arose a what results would be obtained with subjects other than E.

Methods

The purpose of the present study was to compare the ef on plant growth of the laying on of hands by three indiv als with untreated controls. The three persons were a psy atrically normal man (J. B.), fifty-two years old, a wo with a depressive neurotic reaction (R. H.), twenty-six y old, and a thirty-seven-year-old male with a psychotic (d sional) depression (H. R.). The latter two subjects were tients in a psychiatric hospital at the time of the experiment

The main hypothesis which the experiment was designe test was that a solution held for thirty minutes in the ha an individual in a stimulated, confident mood would per- t plants watered by this solution to grow at a faster rate an plants watered by identical solutions held for the same gth of time by persons with a depressive illness or not held anyone (the control group). The experiment also tested ether solutions held by the depressed persons would inhibit ant growth relative to the control group. The experiment as designed in such a way as to permit orthogonal sets to be mpared.[34] Hence, the two depressed subjects would be com- red with each other, and if the results were not statistically nificant, these would be pooled and compared with the ta of the control group. If these three were not significantly fferent from each other, their combined results would be mpared with those of the normal person.

In essence, the procedure consisted of having each person ld a sealed bottle of normal saline between his hands for irty minutes (this procedure is hereafter called a "treat- ent"), then pouring the solution on barley seeds embedded soil, drying the watered seeds and soil in an oven for rty-eight hours, removing them from the oven, and water- g them at suitable intervals with tap water not treated by yone. When the seedlings appeared above the soil, they ere counted and their height measured. The determinations ere then continued until seedling growth reached a plateau, hich occurred seven to nine days after they first appeared ove the soil surface. The results obtained with treated and ntreated saline solutions were then compared. The way in hich the procedure was developed, including the reasons for ing saline in the initial watering, and for the forty-eight- our drying period, was reported earlier.[13]

The saline used in this study was the 500 ml. size of nor- al saline (sodium 154 mEq.L. and chloride 154 mEq.L.) repared by the Baxter Laboratories of Canada Ltd., Alliston, ntario. This solution was sterile, non-pyrogenic, sealed in ttles under vacuum, and is normally used for intravenous fusions in humans.

A summary of the steps taken to create and break the lind" used in this study follows:

1. O. E. prepared soil, embedded seed, and numbered pots. o one knew at this point which pots would receive which eatment.
2. B. G. stapled paper bags over bottles and gave bottles to B., H. R., and R. H. for treatment. After treatment of ttles, B. G. wrote number on bags, and wrote an equation

which identified number on bag with name of person treated the bottle. He gave bottles to H. T.

3. H. T. removed bottle from the bag, put letter on bo and wrote equation which identified letter on bottle number on bag.

4. H. B. randomized pots to decide which pots would which solution. He wrote equation which identified letter bottle with numbers on pots watered with its solution.

5. In the presence of H. B. and A. T., B. G. broke the of each bottle and poured the contents into beakers.

6. A. T. was involved in the initial watering with saline lution; he may have had some information possessed by B., but could not have known more. B. G. was also invol in the initial watering of the plants, but this was conducte such a way that he could not learn what H. B. or A knew.

7. Measurement of number and height of seedlings done by B. G. on days 8 and 9, by B. L. on days 10 and and by O. E. on days 12 to 16, inclusive.

8. After the last counts and heights were determined B. made his information known to B. G., O. E., and J. who did the statistical analysis. O. E. calculated mean hei and yield per pot, J. B. did the statistical analysis of counts (his calculations were checked by B. G.), while B did the statistical analysis of heights and yields.

9. After completing statistical analysis, B. G. and H showed each other their information. With this step, the b was broken and the experiment terminated.

The following calculations and statistical analyses conducted: in the case of the number of plants appearing pot, the percentage of the twenty seeds producing plants converted to angles by using the formula

$$\text{angle} = \text{arc sin} \sqrt{\text{percentage}}$$

as described by Snedecor.[34] These data were then analyze a two-way analysis of variance to assess the effect of treatment.[34] This same kind of analysis was carried out o mean heights per pot and on the yield of plant material pot. A significance level of 5 percent was adopted.[10]

Where the analysis of variance showed significant d ences to exist, the validity of using analysis of variance determined by checking two of the principal assumptions derlying its use: normality of distribution and homogenei variance,[8] the latter being tested by Bartlett's test.[2]

Results

Number of Plants (Table 1): The pots watered by the psy- iatrically normal person, J. B., consistently had a greater umber of plants from days 8 to 16, inclusive, than those of e other three groups. R. H.'s pots had a greater number of edlings than H. R.'s and untreated controls from days 10 to 5, inclusive. H. R.'s pots had fewer seedlings than the un- eated control pots on day 10, but more on days 14 and 15. owever, the analysis of variance showed the treatment effect be nonsignificant.

Table 1

he Effect of 1 Percent Sodium Chloride Solutions Handled by Normal or Psychiatrically Ill Persons on the Mean Number of Barley Seedlings

ay of xperi- ment	Psychotic Depression (H. R.)	Untreated Control	Neurotic Depression (R. H.)	Normal (J. B.)
8	1[1] (5[2]±2[3])	1 (6±2)	0 (4±2)	1 (7±2)
9	3 (17 ±4)	3 (15±4)	3 (20±3)	4 (23±4)
10	4 (25 ±3)	5 (25±4)	6 (31±4)	7 (33±4)
11	6 (31 ±4)	6 (30±4)	7 (36±3)	8 (40±3)
12	9 (40 ±4)	9 (42±4)	10 (43±3)	10 (46±4)
13	9 (42 ±4)	9 (41±4)	10 (45±3)	11 (47±3)
14	10 (44 ±3)	9 (42±4)	10 (46±2)	11 (48±3)
15	10 (46 ±3)	10 (45±3)	11 (48±2)	11 (49±3)
16	12 (49 ±3)	11 (47±3)	12 (51±2)	13 (54±3)

[1] The figure outside the parentheses is the mean number of plants r pot, while the mean and standard error inside the parentheses the angle obtained from the percentage of the twenty seeds per t that produced plants. The formula used for the conversion of rcentage to angle is described by Snedecor[34]: angle = arc $\sqrt{\text{percentage}}$. The significance of the difference between mean mber of plants of the control and treated pots was tested by *t* st using the angles.

[2] Mean.

[3] Standard error.

Note: There were 18 pots per group.

Mean Height and Yield of Plants: The trends shown b in mean height and yield of seedlings were the same, with highest values in the entire experimental period found ir B.'s pots, followed by R. H.'s, then untreated controls, wh lowest of all occurred in H. R.'s pots (Tables 2 and 3). Ho ever, the treatment effect was nonsignificant in the yield seedling material. Examination of the mean height by tw way analysis of variance showed the treatment effect to nonsignificant on days 9, 10, and 16, of borderline sign cance on days 11, 13, and 14 (.10>P>.05), and signific on days 12 and 15 (.05>P>.02).

Table 2

The Effect of 1 Percent Sodium Chloride Solutions Hand by Normal or Psychiatrically Ill Persons on the Mean Height (mm.) of Barley Seedlings

Day of Experiment	Psychotic Depression (H. R.)	Untreated Control	Neurotic Depression (R. H.)	Norr (J. I
9	4[1]±1[2]	6±1	6±1	8±
10	7 ±1	8±2	9±1	11±
11	9 ±1	10±2	11±1	13±
12	18 ±2	20±3	23±3	28±
13	21 ±3	24±3	27±3	31±
14	23 ±3	25±3	29±3	33±
15	29 ±4	32±4	38±4	41±
16	35 ±4	39±5	43±4	45±

[1] Mean.

[2] Standard error.

Note: There were 18 pots per group.

Table 3

The Effect of 1 Percent Sodium Chloride Solutions Hand by Normal or Psychiatrically Ill Persons on the Mean Yield (mm.) of Barley Seedlings

Day of Experiment	Psychotic Depression (H. R.)	Untreated Control	Neurotic Depression (R. H.)	Norm (J. E
9	19[1]± 6[2]	26± 6	25± 6	39±
10	42 ±10	59±15	63±12	85±

11	64 ± 14	85 ± 24	97 ± 16	123 ± 26
12	184 ± 32	223 ± 44	245 ± 35	306 ± 51
13	229 ± 39	259 ± 51	302 ± 42	345 ± 57
14	258 ± 44	285 ± 54	333 ± 46	374 ± 56
15	343 ± 55	365 ± 63	460 ± 54	478 ± 69
16	440 ± 62	465 ± 74	542 ± 64	589 ± 75

[1] Mean.

[2] Standard error.

Note: There were 18 pots per group.

Table 4

Mean Height (mm.) of Plants on Day 12

Block	Psychotic Depression (H. R.)	Untreated Control	Neurotic Depression (R. H.)	Normal (J. B.)
I	26	21	30	36
II	17	20	24	30
III	12	20	14	17
Treatment Mean	18	20	23	28

Analysis of Variance

Source of Variation	Degrees of Freedom	Mean Square
Blocks (B)	2	944***
Treatment (T)	3	309*
Neurotic vs. Psychotic	1	191
Untreated Control vs. first two	1	2
Normal vs. first three	1	733**
B × T	6	102
Error	60	102

*** Significant at 0.1% level.
** Significant at 1% level.
* Significant at 5% level.

Frequency distributions of individual plant heights for day
12 and 15 showed normal distributions without skewnes
Bartlett's test for homogeneity[2] showed that the intrabloc
variances were homogenous for each of days 12 and 15.

The results for days 12 and 15 appear in Tables 4 and
On both days the interaction effect of blocks x treatment
nonsignificant, whereas the blocks and treatment effects a
significant. Orthogonal breakdown of the three degrees
freedom showed that the differences between the normal ar
the remaining three groups was significant at the 1 perce
level on day 12 and at the 5 percent level on day 15, whi
the contrast between the two treatments of the depressed su
jects was nonsignificant on each day. Also, the difference b
tween the untreated control and the two depressed grou
was nonsignificant on both days 12 and 15.

Table 5

Mean Height (mm.) of Plants on Day 15

Block	Psychotic Depression (H. R.)	Untreated Control	Neurotic Depression (R. H.)	Norma (J. B.
I	44	35	49	55
II	26	32	39	43
III	17	28	28	27
Treatment Mean	29	32	38	41

Analysis of Variance

Source of Variation	Degrees of Freedom	Mean Squar
Blocks (B)	2	2492*
Treatment (T)	3	618*
Neurotic vs. Psychotic	1	812
Untreated Control vs. first two	1	52
Normal vs. first three	1	988*
B × T	6	166
Error	60	210

*** Significant at 0.1% level.
* Significant at 5% level.

Discussion

The experiment reported in this paper is a sequel to studies ported earlier, which demonstrated that a significant accelration of cell proliferation occurred in the skin wounds of ice held between the hands of Mr. E as compared with conol animals.[15, 16] Similar results were obtained in the plant exeriments.[13, 14] However, the plants were not held between the ands of Mr. E, but only the saline used to water the plants as so held. These experiments demonstrated that whatever e underlying mechanism was whereby the laying on of ands was producing a significant stimulation of cell growth, was not by the process of suggestion. Moreover, the fact at stimulation of growth could occur upon watering with line solutions which were treated by Mr. E in closed bottles dicates that the effect is *not* due to some chemical subance, such as might have passed from the sweat or breath to the solution, but was due to some physical agent, an engy. This must be so because whatever it was that passed to the solution had to pass through the barrier of glass. The idence against the possibility that the growth-promoting efct was caused by heat emanating from the hands of the rson holding the bottle was presented earlier.[15]

In the present experiment, the plants watered by the saline eated by J. B. were significantly taller than those watered by e saline of the remaining three groups. This was apparent roughout the entire observation period (Table 2), and the fferences were statistically significant on days 12 and 15 Tables 4 and 5). Thus, the prediction that J. B.'s plants ould grow significantly faster than the others was supported y the results. The peat pots belonging to J. B. also produced ore plants throughout the entire observation period but, in is case, the differences were not significant. In view of the eater number and height of plants in J. B.'s group, it is obous that the yield of plant material should also be higher, ut here too the consistent differences were not statistically gnificant. The fact that significant results were obtained in J. .'s case demonstrates that the kinds of significant data obined in experiments with Mr. E and reported earlier are by o means confined to a single individual.

The present study also clarified another point. The possibily was raised in connection with the earlier studies that the heat of the hand caused a greater bacterial growth in t treated saline than in the control, and that this was respon ble for the observed differences in plant growth. The arg ments against this possibility were mentioned earlier however, the fact that the solutions used in the present stu were sterile while they were held in the hands, and significa differences were still observed between them, eliminates p sible differences in bacterial growth in the various bottles an explanation for the observed differences in plant growth.

Because J. B.'s saline solution produced a significant stim lation in plant growth, it may be important to examine subjective reactions while holding the bottles. Unlike Mr. J. B. makes no claim to being a "healer," but when J. B. v investigated in preliminary experiments along with Mr. E. was found that significant effects were obtained with him a as compared with untreated controls. Later, he decided to what would happen when he laid hands on members of family when they became ill, and in such instances claimed to feel "something" flowing down his hands to the flicted part, with the development of heat in the hands f lowed by a marked perspiration in the palms. Therefore, conducting the present experiment, an effort was made reproduce this condition of flow in the hands and then ha him hold a bottle in the hope that the saline would trap "something" that flowed down his hand.

The fact that significant stimulations of seedling growth occur with J. B.'s solution suggests that this feeling of "flo may be more than a subjective sensation, and may invo the actual movement of an objective factor. Moreover, fact that this "something" is very likely an energy and fact that it is able to stimulate cell growth justifies the sugg tion that this energy may have some therapeutic propert On the other hand, because an individual is able to influe solutions in such a way as to stimulate plant growth is still proof that he has a gift of healing. Preliminary experime with three other persons, two of whom were psychiatrica unwell at the time, also produced significant stimulation yeast cell activity, their mood at the time of treating bottles being one of amusement at the thought of being t to hold a bottle. These experiments suggest that a posit mood is required for a significantly positive result in the pl experiments, but it remains to be shown that such a posit effect is significantly correlated with therapeutic effects. A the problem is not only one of demonstrating in an individ

energy capable of accelerating growth, but also of learning
e conditions required for the transfer of energy from a
althy to a sick organism and to enable it to do the work of
aling.

The results obtained with H. R. and R. H. and their sub-
tive reactions while holding the bottles should also be ex-
ained in the same way as was done for J. B. Thus, R. H.'s
ts consistently had more plants from day 10 to day 16
able 1) and consistently taller plants and more plant
aterial from day 10 to day 16 (Tables 2 and 3) than the
treated control ones.

Her emotional attitude while holding the bottle was as fol-
ws: she reacted with surprise when told to hold the bottle
her hand for thirty minutes. In response to her inquiry as
the reason for the procedure, the purpose of the experi-
ent was explained to her. She immediately responded with
expression of interest and a decided brightening of mood.
lso, it was observed that she cradled the bottle in her lap
uch in the manner of a mother holding a child.

On the other hand, H. R.'s pots contained consistently
aller plants (Table 2) and consistently less plant material
able 3) than the untreated control ones.

H. R.'s attitude during the time he was holding the bottle
as anxious, agitated, and depressed. When B. G. gave him
e bottle to hold, he did not inquire why he was asked to do
is, but instead expressed much concern as to what form his
erapy would take. When B. G. took the bottle away from
m, he still expressed these thoughts.

Thus, just as in the case of Mr. E and J. B., there appears
be some correlation between the mood of H. R. and R. H.
the time they were holding the bottles and the growth re-
lting from watering the plants with the solutions they had
eld. With H. R., who was agitated and depressed, the
owth was consistently less than that of the untreated con-
ols, while the plants of R. H., who was stimulated at the
ought of the experiment and may even have derived some
tisfaction in fantasy while holding the bottle, grew better
an the controls. Inasmuch as one depressed patient's plants
d better than the untreated controls, while the other's did
orse, it was to be expected that the overall effect of the two
epressed subjects would not be significantly better than the
ntrols. Thus, the second prediction that plants watered with
lutions treated by depressives would grow significantly less
an untreated controls was not upheld by this study.

However, the study also revealed that the thinking involv
in formulating the second prediction was insufficiently p
cise. Had the emphasis been on the subject's mood *at*
time the bottle was being held and not on his psychiatric
agnosis, the prediction would have been upheld. In
present study, depressive patients were chosen because it v
believed that they would continue to be depressed while ho
ing the bottle, but this turned out to be true only in one
the two patients, a sudden reversal of mood occurring in
other when told of the purpose of the experiment. Similar
it may be expected that a psychiatrically normal person v
yield results similar to those of H. R., should he also
depressed while given a bottle to hold.

In short, it would appear that a positive mood wh
treating the bottles favors a change in the solution wh
leads to a stimulation of cell growth as compared to other
lutions not held by anybody or held by persons in
depressed state. Also, it would seem that a negative mo
such as depression, anxiety, or hostility, experienced wh
treating the solution results in an inhibition of cell grov
when such cells are watered by this solution. The present
periment tends to support these findings, but a fuller acce
ance must await further studies involving more subjects i
variety of emotional states.

Persons who claim to have the gift of healing have of
stated that the work of healing is not done by them but
some Higher Power with whom they claim to be in conta
This they do through evoking some positive emotion in the
selves, such as submission to the will of God or the affirr
tion that "Jesus heals," etc. Also, such persons claim that
best results the sufferer should also be accepting in the se
that he should be in a positive emotional state, or at the v
least not in a negative one, while the healing is being attem
ed. A parallel situation occurred in a wound-healing exp
ment reported earlier.[16] Here, significant accelerations of
wound-healing process occurred only in mice that were m
calm and accepting by stroking their fur gently for short p
ods daily and getting them used to the treatment boxes
several weeks before the experiment began. Mice that con
ued to be nervous after such treatment and made excess
efforts to escape from the treatment cages despite the train
period were eliminated from the experiments, as prelimin
experiments revealed that the wounds of such mice failed
respond to subsequent laying on of hands.

An analogous situation was reported in the experiments on ntling by King and Eleftheriou.[19] In their experiments and ose of others, gentling consisted of lightly stroking the ani- l (usually rats, but mice in some experiments) along the ad and back. Different experimenters varied the length of daily session and the age at which this procedure was ini- ed. The purpose of King and Eleftheriou's study was to npare the effect of gentling on the performance of tame d wild animals in a conditioning apparatus. They found at gentled mice performed better than non-gentled controls en the mice were of a strain that was naturally docile. On other hand, gentled mice from a wild and untamable ain performed less well than their non-gentled controls.

Also, it is well known that in psychotherapy the prognosis patients who do not come voluntarily to treatment is poor; at is, an attitude of acceptance is expected from the patient fore therapy can begin. Again, Freud pointed out that once erapy has begun the patients must have faith in their physi- ans to help them "fight out the normal conflict with the sistances which we have discovered in them by analysis."[12] eich[29] went further, making this factor a cornerstone of his aracter-analytic technique by refusing to give interpreta- ons to patients' material as long as elements of distrust lin- red on in them.

In general medical practice, the faith which a patient has his doctor has long been recognized as being an important ctor in his restoration to health. Furthermore, a physician ose bedside manner encourages such feelings will also ake it easier for any therapeutic mechanism to function ore effectively.[23]

Moreover, not only are positive emotions on the part of patient required to insure improvement, but the same is quired of the therapist. Some psychotherapeutic associations quire a prolonged investigation of the inner emotional life the apprentice therapist and insist on a certain minimum emotional health. However, even among trained and prac- ing therapists, Truax and Carkhuff[35] have shown that there "good" and "bad" ones, in that the former, who bring to ar high levels of accurate empathy, unconditional positive gard, and therapist genuineness, tend to produce positive anges in personality functioning beyond that usually seen matched control groups. By marked contrast, patients re- ving relatively low levels of the three above-mentioned nditions show negative changes in personality functioning when compared with the matched control group. In ot words, while good therapists tend to produce better psyc logical functioning, bad ones tend to produce further gressive behavior. The situation here is similar to the posi effects produced by J. B. on the plants and the negative fects produced by H. R. Qualities such as unconditional p tive regard, accurate empathy, and genuineness are attitu which are either present in certain situations or not: that they cannot be "put on," and yet they are apparently deci in therapy.[6] That they may, in fact, be at least as impor as specific training in many psychotherapeutic situation suggested by the high consistency of improvement rates fo with various therapies ranging from those conducted physicians without psychiatric training to intensive psyc analysis,[9] and by the similar improvement rates for vari types of neurotics treated by different forms of psychot apy.[1] Indeed, in a recent study Poser[28] has shown that un graduate students with no training or experience psychotherapists achieved slightly better results than trai psychotherapists during group therapy with 295 psychotic tients, the criterion of therapeutic behavioral change b their psychological test performance before and after months of therapy. Presumably, the untrained personnel v intrigued by the novelty of the task they were requirec carry out and therefore performed enthusiastically. To this hypothesis, a second experiment of the same kind sho be carried out with the same students. In this paper, P refers to other studies of a similar nature.

The experiments on the effects of gentling animals h relevance for the results described in this paper, bec both in the laying on of hands and gentling the hands brought into contact with the skin. However, stroking of skin is generally not involved in the laying on of hands is in gentling. Indeed, in the studies on mice described lier.[16] Mr. E's hands were close to, but not touching the s Studies on the effects of gentling have reported metab rates, lower emotionality, faster growth rates, and gre resistance to stress. However, agreement is lacking. T Weininger[36] and Ruegemar and Silverman[32] found a larg crease in weight: Mogenson, McMurray and Jaques[25] a s increase; Scott,[33] and Mogenson and Ehrlich[24] no cha while Marcuse and Moore[22] found the gentled rats to be nificantly lighter than the controls. There is also lack agreement on the effects of gentling on rodents bearin

nsplanted tumor. Thus, Newton and Bly[27] reported that
ndled rats bearing the Walker carcinoma 256 survived sig-
icantly longer than non-handled controls. Conversely, Lev-
and Cohen[21] reported that manipulated mice bearing the
kemia L-1210 died significantly sooner than non-stimu-
ed controls.

The similarity of the results observed in the gentling ex-
riments and those described in the present study may be
mmarized as follows:

In the latter, water was held between the hands and both
sitive and negative effects on plant growth were observed
ative to the controls, depending on the person holding the
ter. In the gentling experiments, animals were held in the
nds and stroked and both positive and negative effects were
o observed. In our experiments, the kind of effect observed
s related to the emotional state of the subject at the time
was holding the bottle. In the animal experiments, no
ention was made of the emotional states of the persons do-
g the gentling. If the results of our studies could be extrap-
ated to the experiments involving gentling, then it would
hypothesized that in those experiments where handling
sulted in growth stimulation, the persons doing the gentling
ere in a positive frame of mind and perhaps had a positive
eling for the animals they were stroking. On the other hand,
ose experiments reporting negative results may have had
entlers" with the opposite feeling.

The papers involving gentling are careful to point out at
hat age the procedure was carried out, and they even indi-
ite the rate at which the stroking was done. In general, the
imals were stroked on the back of the head down to the
l at the rate of fifty strokes per minute, ten minutes daily,
r three weeks following weaning. However, as stated above,
where are any indications given concerning the feelings of
e persons involved in this procedure. It would appear from
r studies that these feelings may be of considerable impor-
nce, and indeed might explain the reason for the apparent
ntradictions between various reports on gentling.

The phenomenon of the laying on of hands also has a rela-
n to the placebo effect. This effect may be defined as any
sponse attributable to a pill or potion except that due to its
harmacodynamic or specific properties. Some would widen
is definition to include not only pills, but other procedures,
ch as psychotherapy.[31] That this response is common is
own by the recent comprehensive review of Haas, Fink,

and Härtfelder,[18] who reported that 40.6 percent of 14,1 patients with illnesses ranging from simple headache to mu ple sclerosis obtained relief from placebo pills. Other surv also reported high placebo relief figures.[3, 4]

The placebo effect can also be quite powerful, even to extent of reversing the normal pharmacological action drugs. For example, prostigmine induced abdominal cram diarrhea, hyperemia, hypersecretion, and hypermotility of stomach in a subject who later responded similarly to place injection and atropine sulfate.[37] However, atropine sulf normally inhibits gastric function.

Again, the personality of the investigator himself can h a definite, measurable effect on the subject being tested, this quite separate from any bias regarding the drug under vestigation. For example, two investigators measured gast secretion in healthy humans in response to an oral place In one group of subjects, a 12 percent increase in gast acidity was observed and in another group an 18 percent crease was observed following the administration of the p cebo (cited in Bell[5]). These differing results were consist when each of the experimenters was used. This is similar the situation where two types of psychotherapists were fou by Truax and Carkhuff[35] and the two types of effects p duced by different subjects on plant growth in the pres study.

It is a well-known fact that enthusiastic reports describ the therapeutic action of many drugs when first appearing the market are often followed by a subsequent marked crease in such effects. This is another example of the place effect. The importance of the beliefs of the physician garding the therapeutic efficacy of any remedy he administ is interestingly revealed by the following case report:

A patient had suffered from chronic asthma for twen seven years, during which time he had become refractory epinephrine. Having suffered almost continuously for the p seventeen years, he became a favorite subject on whom test new drugs. Finally, the product of one pharmaceuti company seemed to be effective. When he was given agent, he was free of asthma; when it was stopped, asthma returned. His physician wished to test the placebo fect, and he substituted the placebo without the patie knowledge—and the physician was not surprised when asthma was not relieved. Shifts from agent to placebo back again were carried out with consistent results in favor

agent. In due course the drug company was approached
additional supplies of the agent, and they admitted that
ause of so many positive enthusiastic reports, they had
t along, in this instance, the placebo first (cited in Bell[5]).
Two explanations are possible: the physician's belief trans-
ted itself either directly to the patient or indirectly, via the
, in the same way that the feelings of J. B. affected the
wth of the plants via the saline solution poured over them.
e effect of the pill on the patient was positive because the
ysician hoped (perhaps unconsciously) that the pill would
e the patient. On the other hand, when he believed that he
s dealing with the placebo, there was no generation of
sitive emotion and therefore the effect was nil.

Inasmuch as the laying on of hands involves the evocation
touch, it is important to remember that in the first few
nths of life in the human, the skin is the first organ
ough which incoming meaningful sensory stimuli must
ss. Although the infant may have a rudimentary sense of
ell, taste, sight, and sound, it is the nerve endings of touch,
nperature, and pain fibers which are the first to be mye-
ated. Deprivation of skin contact during the earliest
nths of life has been shown to lead to difficulties with lan-
age, comprehension, and expression later in life, and the
ger the deprivation, the greater the damage.[7] In adults
o the importance of the sense of touch in the interpersonal
ations is obvious from the fact that handshaking, holding
nds, walking arm-in-arm, nuzzling, nose-rubbing, kissing,
d embracing are accepted as evidences of friendliness and
ection. The lover first of all wants to touch the beloved.

In animals too, skin contact in early life is essential for
vival. Animal breeders, husbandrymen, veterinarians, and
ffs of zoos have observed that if the newborn animal is
some reason not licked, particularly in the perineal
ion, it is likely to die of a failure to function of the gas-
-intestinal or genito-urinary system.[26] The same problem
se during early attempts to raise germ-free animals.[26]

Having examined the three phenomena of laying on of
nds, psychotherapy, and the placebo effect separately, it is
ical to inquire what is common to all three. First, where
orable effects are claimed, there can always be found an
ment of faith or trust on the part of the patient in the
ler or therapist, or in the pill or potion offered as a
nedy. Also, there is rapport between patient and therapist,
l this can only occur if the feelings of both, but especially

the latter, are such as not to stand in the way of the deve ment of such rapport. Secondly, unfavorable effects car obtained if the emotions of the therapist or physician are ative. This was observed in psychotherapy, in the placebo fect, and presumably could also occur in the laying or hands, as suggested by the inhibition of plant growth duced by H. R.'s treatment of the saline in the present st The negative effects reported in some of the gentling exp ments presumably have the same explanation. Thirdly, the fects of psychotherapy, placeboes, and the laying on of ha are usually regarded as having been produced by psychol cal means,[11] and in the latter two cases by some process volving at least some elements of suggestion. However, stimulation of cell growth produced in the wound-healing plant-growth studies by the laying on of hands could not been produced by such means inasmuch as the effects produced on mice and barley seeds, which by all nor criteria are not suggestible. The fact that such effects produced, in the plant-growth experiments, via a saline tion treated in closed or sealed bottles strongly implicat physical agent—an energy. Therefore, it is suggested such an energy, generated in the patient by feelings of in the physician through his belief in the efficacy of remedy and then transferred to the patient, is at the bas much that is observed in psychotherapy, the placebo ef and the laying on of hands. The strongest evidence of t three areas comes from the laying on of hands, because majority of so-called healers have frequently claimed to perience a vibration or flow of energy during the laying o hands. Our studies to date tend to support the suggestion such an energy is in fact involved. Also, inasmuch as both vorable and unfavorable responses have been observed, t must be a dual aspect to this energy.

As to the nature of the energy itself, little can be said the present studies, beyond the fact that it stimulates growth. In this respect, the claim of Gurwitsch[17] that the a mitosis-cell stimulating radiation in living organisms interest. Also relevant to the suggestion of a living energy Reich's contributions,[30] which should be studied for the they shed on the question of the doctor-patient relation on a biological energy flowing in the living organism, an its nature.

REFERENCES

1. Appel, K. E., Lhamon, W. T., Myers, J. M., and Harvey, W. A. *Long-Term Psychotherapy in Psychiatric Treatment*. Baltimore: Williams and Wilkins, 1953.
2. Bartlett, M. S. “The Problem in Statistics of Testing Several Variances.” *Proceedings* of the Cambridge Philosophical Society, Vol. 30, 1934, 164-169.
3. Beecher, H. K. “The Powerful Placebo.” *Journal of the American Medical Association*, Vol. 159, 1955, 1602–1606.
4. ———. *Measurement of Subjective Responses*. New York: Oxford University Press, 1959.
5. Bell, J. S. “The Placebo Effect in Drug Evaluation.” *Applied Therapeutics*, Vol. 6, 1964, 933-934.
6. Chessick, R. D. “Empathy and Love in Psychotherapy.” *American Journal of Psychotherapy*, Vol. 19, 1965, 205-219.
7. Cohen, S. “Contact Deprivation in Infants.” (Paper delivered before the Pediatric Section, American Medical Association, June, 1965.)
8. Eisenhart, G. “The Assumptions Underlying the Analysis of Variance.” *Biometrics*, Vol. 3, 1947, 1-21.
9. Eysenck, H. J. “The Effects of Psychotherapy.” *International Journal of Psychiatry*, Vol. 1, 1965, 99-144.

0. Fisher, R. A., and Yates, F. *Statistical Tables for Biological, Agricultural and Medical Research*. London: Oliver and Boyd, 1948.

1. Frank, J. D. *Persuasion and Healing: A Comparative Study of Psychotherapy*. Baltimore: The Johns Hopkins Press, 1961.

2. Freud, S. *Introduction to Psychoanalysis*. Garden City, New York: Garden City Publishing Co., 1943.

3. Grad, B. “A Telekinetic Effect on Plant Growth.” *International Journal of Parapsychology*, Vol. 5, Spring, 1963, 117-133.

4. ———. “A Telekinetic Effect on Plant Growth. II. Experiments Involving Treatment of Saline in Stoppered Bottles.” *International Journal of Parapsychology*, Vol. 6, Autumn, 1964, 473-498.

5. ———. “Some Biological Effects of the ‘Laying on of

Hands': A Review of Experiments with Animals a Plants." *Journal* A.S.P.R., Vol. 59, April, 1965, 95-127.

16. Grad, B., Cadoret, R. J., and Paul, G. I. "The Influen of an Unorthodox Method of Treatment on Wou Healing in Mice." *International Journal of Parapsych ogy*, Vol. 3, Spring, 1961, 5-24.
17. Gurwitsch, A., *Die Mitogenetische Strahlung*. Berli Springer, 1932.
18. Haas, H., Fink, H., and Härtfelder, G. "The Place Problem." *Psychopharmacology Service Center Bullet* Vol. 2, July, 1963, 1-65.
19. King, J. A., and Eleftheriou, B. E. "Effects of Ea Handling Upon Adult Behavior in Two Subspecies Deermice, Peromyscus Maniculatus." *Journal of Co parative and Physiological Psychology*, Vol. 52, 19 82-88.
20. Kreig, M. B. *Green Medicine*. Chicago: Rand McNa & Co., 1964.
21. Levine, S., and Cohen, C. "Differential Survival of Le kemia as a Function of Infantile Stimulation in DBA Mice." *Proceedings of the Society for Experimental Bi ogy and Medicine*, Vol. 102, 1959, 53-54.
22. Marcuse, F. L., and Moore, A. U. "Heart Rate in Tam and Untamed Rats." *American Journal of Physiolo* Vol. 139, 1943, 261-264.
23. Meares, A. *The Management of the Anxious Patie* Philadelphia; W. B. Saunders Co., 1963.
24. Mogenson, G. J., and Ehrlich, D. J. "The Effects Early Gentling and Shock on Growth and Behavior Rats." *Canadian Journal of Psychology*, Vol. 12, 19 165-170.
25. Mogenson, G. J., McMurray, G. A., and Jaques, L. "Effects of Stress and Administration of Cortisone Weight Gain of Gentled Rats." *Canadian Journal of P chology*, Vol. 11, 1957, 123-127.
26. Montagu, M. F. A. "The Sensory Influences of the Ski *Texas Reports on Biology and Medicine*, Vol. 11, 19 291-301.
27. Newton, G., and Bly, C. G. "Transplantable Tum Stress and Early Experience." (Paper presented at annual meeting of the American Psychological Assoc tion in the symposium "The Effect of Stress on Can Development," August 29, 1958. Washington, D. C.)
28. Poser, E. C. "Effect of Therapists' Training on Gro

Therapeutic Outcome." *Journal of Consulting Psychology*, Vol. 13, 1966, 283-289.

Reich, W. *Character Analysis.* Rangeley, Maine: Orgone Institute Press, 1949. (3rd, enlarged edition.)

———. *Selected Writings: An Introduction to Orgonomy.* New York: Noonday Press (subsidiary of Farrar, Straus and Cudahy), 1960.

Rosenthal, D., and Frank, J. D. "Psychotherapy and the Placebo Effect." *Psychological Bulletin*, Vol. 53, 1956, 294-302.

Ruegemar, W. R., and Silverman, F. R. "Influence of Gentling on the Physiology of the Rat." *Proceedings of the Society for Experimental Biology and Medicine*, Vol. 92, 1956, 170-174.

Scott, J. H. "Some Effects at Maturity of Gentling, Ignoring and Shocking Rats during Infancy." *Journal of Abnormal and Social Psychology*, Vol. 51, 1955, 412-414.

Snedecor, G. W. *Statistical Methods.* Ames, Iowa: The Iowa State College Press, 1948. (4th edition, 3rd printing.)

Truax, C. B., and Carkhuff, R. R. " 'For Better or for Worse' or the Process of Psychotherapeutic Personality Change." In *Recent Advances in the Study of Behaviour Change* in *Proceedings of the Academic Assembly on Clinical Psychology*, 118-157. Sponsored by the Department of Psychology and the Department of Psychiatry, McGill University, Montreal, 1963.

Weininger, O. "The Effect of Early Experience on Behavior and Growth Characteristics." *Journal of Comparative and Psychological Psychology*, Vol. 49, 1956, 1-9.

Wolf, S. "Effects of Suggestion and Conditioning on the Action of Chemical Agents in Human Subjects—the Pharmacology of Placeboes." *Journal of Clinical Investigation*, Vol. 29, 1950, 100-109.

III.

RELIGION AND PARAPSYCHOLOGY

PSYCHICAL RESEARCH AND THEOLOGY

W. R. Matthews

The wide public interest in parapsychological phenomena
s been interpreted as a neo-religious one, as a search for a
pernatural element with a scientific base. In the United
ates, the Spiritual Frontiers Fellowship, with headquarters
Independence, Missouri, specifically aims to link religion
d parapsychology, notably in the fields of prayer, healing,
d man's survival after death. In England, the Churches'
llowship for Psychical and Spiritual Studies follows similar
ms. Dr. Matthews, Dean of St. Paul's, London, read this
per as the Sixth Myers Memorial Lecture of the Society for
ychical Research, London, January 17, 1940; it was pub-
hed in the Society's Proceedings *(Part 161).*

The subject which I propose to discuss in this lecture is a
ge one and I must apologize at the beginning for the su-
rficiality of what I have to say on many topics which need
olonged and profound discussion. My excuse is that I be-
ve it may be useful to take a rapid survey of a territory
ich has been but little explored and try to gain some
nception of the work which needs to be done. One limita-
n I must insist upon in order to avoid misunderstanding.
y title is "Psychical Research and Theology"—not Religion.
ough it is impossible to draw a clear line of distinction be-
een religion and theology, or indeed between theory and
ctice in general, in a rough way we can distinguish the ex-
rience of religion from the intellectual activity of the for-
lation of religious doctrines and concepts. In this lecture I
ll have nothing to say, either in criticism or approval, of
ritualism insofar as that is a religion and I shall confine
self to Christian theology, partly because it is the only one

about which I am competent to speak and partly because it
the only one with which psychical research in this count
comes into contact.

The attitude of the Christian Church to psychical resear
in the past has been, on the whole, one of antagonism, or
least of suspicion. This has not been, in the main, due
skepticism concerning the phenomena which are the subje
matter of the inquiry, but rather to a conviction that th
were real and that they came from a source only too w
known. Though at least one of the Hebrew prophets regard
the idols of the heathen as simply illusions and some of t
Christian Fathers held the same view, the general opinion h
been that abnormal and supernatural phenomena could
produced by evil spirits and that the pagan altars were ere
ted to devils not too deeply disguised. Only in the eighteen
and nineteenth centuries did any considerable number
Christians adopt a skeptical position with regard to the pos
bility of witchcraft and commerce with the devil.

In recent times the reluctance of Christians to see a
good in psychical research has, I suppose, arisen from t
different causes. On the one hand, there remained the tra
tional feeling that such investigations were dangerous a
partook of the nature of communicating with "familiar sp
its"; on the other hand, there was the attitude of disdain co
monly adopted by the scientific world toward psychi
research. The two orthodoxies, religious and scientific, so d
ferent in other respects, concurred in regarding psychi
research as disreputable. It would, of course, be both inacc
rate and ungrateful to forget that this general attitude of s
picion has had notable exceptions. Christian divines ha
contributed to the study of paranormal phenomena and th
eminent Victorian ecclesiastic, Bishop Boyd Carpenter, h
the presidency of our Society.

In very recent years a notable change may be observ
The spread of interest in the subject, sometimes in questi
able forms, led the Archbishops to appoint a Commission
consider the question of the relation of psychical resea
and of spiritualism to the Christian faith. This Commissi
reported some time ago and the delay in the publication of
findings suggests that they may have found their final resti
place in the archepiscopal pigeon holes, if not in the archep
copal mind. In these circumstances I feel myself at liberty
disclose only two facts about the work of that Commissi
No one will be surprised to hear that strong difference

pinion was manifested in the Commission. That might have een predicted. What was perhaps unexpected by many memers of the Commission was the evidence that a number of eople had found in psychical research a confirmation of heir Christian faith and even a way from agnosticism to beef. This has received a very limited support from Professor . D. Broad who, in a recent essay on the future of Christiany, mainly pessimistic in tone, expresses surprise that theoloians do not pay more attention to the implications of the reults of psychical research. In attempting to contribute somehing to this enterprise I feel that I shall be acting in the spirit f the great man whose name this lecture commemorates, for rederic Myers never concealed the fact that he hoped to gain rom psychical research new light on the mystery of man's fe and destiny.

The area in which there seems to be some contact between heology and psychical research is far wider than the one uestion which occupies the horizon of many—that of surival of bodily death. The problem of survival is, in some repects, the most important and the most controversial and I ropose to leave it to the end, first making some remarks pon some topics which are, from the theological point of iew, prior to that of personal immortality.

The scope of theology in modern times is larger than is uspected by those who have not studied the subject. The rowth of scientific knowledge has presented it with new roblems and new tasks. Among these is that of the nature nd development of religion in general. For theologians of an arlier time these problems scarcely existed, or, if they were dmitted at all, seemed capable of finding a summary soluon. The development of the study of Anthropology and omparative Religions has changed the situation profoundly. here are still Christian theologians who think it not only ossible but essential to treat Christianity as a revelation so istinctive and unique that it has no significant relations with ther religions, and of late, until the influence of Karl Barth, hey have become both numerous and influential; but, on the hole, it remains true that the modern theologian, while olding that in Christianity is contained a unique revelation, ecognizes that it has a place in the general development of he religious experience and of religious ideas.

A great deal of importance has been attached to the definion of religion and the fact that among the hundred or more ggested definitions not one has secured general acceptance does not indicate that the whole discussion has been futi There would be no great value in possessing a logical defi tion of religion; a formula which would cover the beliefs a experience of all religious persons from the fetish worshipp to the philosopher-saint would tell us little about the signi cance of religion. The real interest in the discussion is the quiry into the nature and significance of religion as an aspe of the continuing and developing life of humanity, to deci how it can be distinguished from magic and, at a later sta of its evolution, how it differs from and how it is related other modes of spiritual activity, such as morality and art.

In my opinion this question of the nature of religion a its status as a "moment" in the life of spirit cannot be cided by any empirical method, but is one of the cent problems of metaphysics. Nevertheless, within limits, sistance has been gained from psychology—though not think so much assistance as some psychologists would alle It is difficult to say whether psychical research can help much in this department of theology, but there is one spec aspect of the general problem of the nature of religion whe it is conceivable some important contribution might co from researches such as this Society is concerned with. It been held by some distinguished writers that mysticism is essence of religion or, alternatively, that in the mystical perience we have religion in its most concentrated form. O ers have held, on the contrary, that mysticism is a form religious experience which is doubtfully Christian and c tainly not the highest. It is a well-known fact that some the physical phenomena related on good authority as happe ing in connection with saints of the mystical type have a occurred in connection with mediums—this at least is alleg on equally good authority. The most notable example is le tation. This obviously suggests some relation between mystical and the mediumistic trance. But this remark d not take us very far, for clearly the two types of experien might have this characteristic in common and yet be, in important respects, quite different.

It appears to me that many writers on religion assume readily that mysticism, as such, is good and that, when on we have described a man as a mystic, we are absolved fro the duty enjoined on us by the Apostle to "try the spir whether they be of God." I am inclined to think that the are mystical states which are morally and spiritually either different or evil. There are persons who have what we c

ly call "spiritual power," who are apparently in contact
th some source of energy which reinforces their natural en-
wments and gives them a unification of purpose which
akes them most formidable, but these persons are often evil
d their mystical experience is a heightening of their will
d their capacity for destruction. In other words, I believe
at there is meaning in the word "demonic." We should not
ve to look very far for an example of a mystic of this type
for the evidence of his power for evil. It occurs to me that
me light on this question might be gained by a study of the
fect of mediumship on the personality and character of the
edium. Probably something has already been done on these
es, but if so I am not acquainted with it and there are ob-
ous reasons why a publication of results would be difficult.
should expect to find that, in cases where there was already
formed character, that character would be enhanced by the
ediumistic experience.

There is another element in the problem of religion—its
velopment. The theologian of the liberal type has generally
ld that the history of religion, in spite of its very question-
le pages, has been, on the whole, a progress in the appre-
nsion of Reality. He has contended that the crudest creed
d some scintilla of truth and that the development of the
ea of God, culminating in the Christian revelation, was the
olution not of an illusion but of a concept which is, in
eibniz's phrase, *bene fundatum*. The theologian has not
und it an easy task to interpret the story of religion as one
hich has a denouement, though I do not think he has been
fending a hopeless cause even on the assumption that the
mmonly accepted presuppositions of Anthropology are cor-
ct. He may at least claim the support of Dr. Whitehead,
lfred North Whitehead, Mathematician-philosopher (1861-
947).] who has said that religion is the one sphere of human
tivity in which progress is undeniable. But there has been one
rmidable difficulty. Religion has been associated with beliefs
d practices which, from the standpoint of modern scientific
mmon sense, are illusions and superstitions. It has believed
at it had experiences which in fact it could not have had.
e question is obvious: Where so much is admittedly super-
tion and error may we not infer that the central belief, that
God, and all the experience associated with it are infected
th the same illusiveness? The inference is natural enough,
ough illogical. There would be a gain, if not from the

standpoint of pure reason at least for the imagination, if could push back the frontiers of mere phantasy in the histo of religion.

Professor H. H. Price in his Presidential Address express the hope that anthropologists would learn something of psyc cal research and psychical researchers something of Anth pology. It is indeed much to be wished. Scientific research the history of religion has taken for granted that nothing c happen which is undreamed of in Herbert Spencer's philo phy. It is often said that spiritualism is the revival of anci superstitions and there is obvious truth in the remark, but may be that the revival is due not only to the persistent nee of the human mind and its readiness to be deceived, but a to the fact that there was some basis in genuine experie for these ancient beliefs. Certainly the phenomena of medium's trance, clairvoyance, and haunting, which ha been the subject of careful study, seem to be analogous what we hear of oracles and of the sacred places. We m add that the mixture of fraud with authentic paranormal p nomena seems to be testified both in ancient and mode times. There is good evidence that pious deception playe part in the temple-worship of more than one ancient religi It is, I understand, the opinion of experienced investigat that mediums who have been detected in trickery have so times been possessed of genuine powers of producing pa normal phenomena.

Though it is evident enough that these observations strictly relevant to one branch of theological study, it is ceedingly difficult to say precisely what consequences th might be expected to have. I have suggested that psychi research may throw light on the development of religion a perhaps do something to remove the impression that, at le in its earlier stages, it consists entirely of illusions, but e dently the theologian will be left with a new problem on hands. What relation have these psychic experiences with growth of the knowledge of God and how are they to be co nected with the idea of revelation? I certainly have no so tion to this problem and I suggest that the theologian cann really make much progress in its solution until there is so measure of agreement among investigators concerning causes of the phenomena. If the spiritistic hypothesis shou eventually be accepted as the most likely one, we should back at a position very much like that of the primit Church, which, while repudiating the whole of pagan religi

id not question the existence of the heathen deities or the re-
ity of their influence.

St. Paul, at least in one phase of his thought, seems to have
garded the whole of the religion of the world prior to the
dvent of Christ as partly the work of evil spirits and partly
ue to the mediation of spirits which were not evil but cer-
inly lower than God. Christ, according to this view, tri-
mphed over all these "powers and principalities" not by
owing that they did not exist but by making them unneces-
ry, by opening direct access to God. The horror of falling
way from Christ to pay honor to spiritual powers was not
at they did not exist but that they did, and the backslider
as to be reprehended, not because he was superstitious but
ecause he was under the influence of spiritual forces which
ere either evil or at least lower than the highest. It seems
ot impossible that a conception of this kind may once again
ppear as worthy of the consideration of philosophers.

The central question for theology is the reality of God and
is nature. Every other problem is subordinate to this and
ust be treated in relation to it. Though there are undoubt-
dly persons, as I have remarked, who have had their faith in
od increased and enlarged by their study of psychic phe-
omena, I do not see how Theology can gain any direct as-
stance from this source. No one who understands what he is
bout would suppose that there could be a purely empirical
gument for Theism or that God could be the conclusion of
n investigation by scientific methods. This does not mean
at empirical data do not play a necessary part in the argu-
ent for Theism; they are the starting point, for example, of
e famous Cosmological and Teleological proofs. The most
hich we can expect from psychical research is some signifi-
nt addition to the data. The alleged communications of de-
arted spirits deal frequently with this central problem of
eology, but I must confess that, with few exceptions, the
rmons of the departed seem worse even than those of
eachers still in the flesh—more dogmatic and less coherent.
hat some personality purporting to be the spirit of a great
an or of a friend should believe in God is not necessarily
ore convincing than the fact that Mr. H. G. Wells does not
lieve in God. We do not know what opportunities the al-
ged communicator has for arriving at a rational conclusion.
or again, so far as I have been able to judge, is there any
nanimity in the utterances of "spirits," either on the nature
God or even on His reality. Even if we accept the spiritis-

x31817

tic hypothesis, there is nothing of any importance to gained with respect to belief in God from the testimony of t departed.

Nevertheless I think the results of psychical research ha a certain indirect value for the theologian in his unending d bate on the question *An Deus sit.* The great enemy of theist belief is materialism in the wider sense—that naïve philos phy which is the natural initial assumption of both commo sense and science. We need not define materialism furth than by saying that it covers any philosophy which seeks explain the higher in terms of the lower and, more speci cally, regards mind as wholly dependent upon the physic order or even as a kind of shadow cast by it. I do not sa that a refutation of this theory is equivalent to a demonstr tion of Theism, for there are other views which escape t absurdities of materialism, but I suggest that to expose i inadequacy is an important element in the case for Theism.

I do not wish to be misunderstood. I do not hold that ps chical research has provided us with a disproof of materia ism nor that it can do so; the claim which I would make more modest. It seems to me that a survey of the evidenc on the whole, suggests that materialism will not do. It mak the hypothesis not more plausible but less.

Let us glance briefly at the data. I suppose that the fact telepathic communication is about as widely accepted as an thing in this highly controversial field. It would, of course, absurd to allege that no explanation is conceivable whi would not harmonize with a materialistic philosophy, but t facts as we have them seem highly recalcitrant to such trea ment. On the surface, what we have is a direct communic tion between mind and mind, in some instances at lea apparently instantaneous over long distances. So far as know, no physical hypothesis which even pretends to expla the phenomena has ever been put forward. The gener statement that it is "all done by waves" seems about as e lightening as the explanation that the vanishing trick by co jurers is "all done by mirrors," for even if there were vibration detected, which seems unlikely, a vibration is not thought or a feeling.

In the present circumstances it seems wise to say nothi about "extrasensory perception," because the experiments this country have failed to confirm Dr. Rhine's results, and would seem unlikely that the atmosphere of Duke Universi is specially favorable for the development of this faculty. It fficient to observe that, if the existence of this power should proved, even in one instance, it would be very difficult to in with any materialistic philosophy.

The phenomena of prediction, in the various forms in hich they are alleged to occur, are admittedly perplexing, ut so far as my reading goes it is difficult to doubt that auenticated cases are not very uncommon. Assuming that ere are experiences which seem to presuppose acquaintance ith events which have not yet occurred, they would have inirectly an important bearing on belief in God. In the first ace, they may be said to lend some support to the belief itelf. Personally, I do not see that theories about the nature of me, interesting and important as they are, can clear up the ystery. There may be many time-series, but the event which foreseen or predicted is an event which will happen in the me-series of the persons concerned, the one in which they re now and which will continue until the predicted event omes to pass.

The problem is, how can an event, which has not yet hapened, be an object of knowledge, not by inference, but by acuaintance? Probably there are several philosophies which ould incorporate this alleged fact, but at least it may be said or Theism that it has a ready explanation. Events may exist efore they happen in the mind of God. But this brings us to e second theological implication of prediction. Must we not old, if we adopt the theistic explanation, that all events are ecessary, that the divine Providence orders all things in such way that nothing is really contingent and freedom of choice an illusion? Some Christian theologians have not shrunk rom these conclusions, but whatever may be said for them n other grounds, I do not think they are necessary conseuences of prediction. It would be equally plausible to onceive that all the possible courses of events are present to e divine Mind and that the one predicted is only one of the vents which may occur. Most of us know of instances where n apparently predictive experience has indicated an event hich might have happened and which nearly happened but hich did not happen. Possibly the prediction hindered its wn fulfillment. The theologian would have no difficulty in pposing that some predictive experiences are warnings hich may or may not be heeded.

I shall have to refer to the problem of survival later in the cture, but it is obviously relevant to this question which I n at present discussing. It would, I suppose, be accepted by all psychical researchers that the hypothesis of survival is c of the "live options," to use a phrase invented by one of c most eminent Presidents. Nothing has emerged which ru out the hypothesis, and I think we may go further and s that several facts have been established which would certai not have been anticipated by one who holds that conscio ness is a function of the body. The persistence of the perso ality after the dissolution of the physical organism not o remains a possibility but there are indications that the pur empirical investigation renders it more plausible than it w when these super-normal phenomena were regarded as no ing but illusion. That I believe to be a cautious statement the position and, if it is correct, we may say that psychi research has here again failed to confirm materialism a has, within limits, afforded some support to a contrary t ory; for it seems to me to be beyond question that the tablishment of survival would be a fatal blow to every type materialist hypothesis.

If I had unlimited time at my disposal I should n proceed to discuss the bearing of physical phenomena, su as telekinesis, on the question before us, but the facts are perplexing that I have nothing of any importance to c tribute to their explanation. On the whole, they seem to s gest once more the existence of force which is not, in a ordinary sense of the word, physical.

I do not doubt that hypotheses of a materialistic kind be framed to cover all these phenomena which I have bri touched upon, but they become so complex that they l persuasiveness. The general impression, I suggest, which unprejudiced observer would gain from a survey of the v ous classes of well-authenticated super-normal phenom would be unfavorable to a materialist philosophy and th up to a point, favorable to the theistic conception, but, I m repeat, I do not think for a moment that any direct supp for belief in God can be gained from them. Perhaps might put it roughly in this way: the phenomena in quest are much less surprising and disconcerting to one who ho a theistic philosophy than to one whose presuppositions materialistic.

The plan of my lecture obliges me to pass rapidly fr one subject to another and I must now make some rema on a matter which has great importance for Christians— reliability of the New Testament narratives as a whole. I lieve that one of the indirect effects of psychical research een to encourage a new attitude on the part of critical scholrs to the so-called miraculous element in the Gospels and cts. In this field, as in the wider field of the history of relion, we have been under the domination of a narrow rationlism which assumed in advance that "miracles do not appen"; by this is meant that no event could possibly have ccurred which transcended commonplace experience. Thus it ecame necessary to relegate all the supernatural incidents of e New Testament to the category of mistake, illusion or egend.

The consequences of this supposed scientific necessity were mbarrassing, because the earliest sources for the life of hrist plainly represent Him as the possessor of abnormal owers and, if the whole of this element in the Gospels must e rejected, we are left with a residuum which must itself be uspect by reason of its association with such questionable atter. A great accumulation of knowledge, not all of it erived from psychical research, has altered the situation. piritual and mental healing, the study of divided personalies, clairvoyance, telekinesis, all these have suggested very orcibly that the limits of the credible were too narrowly rawn by the older rationalists. It appears to me that the Soiety for Psychical Research is a standing refutation of ume's famous argument against miracles. You remember hat, taking a miracle to be an event contrary to common exerience, he urged that it is more probable that testimony hould be false or mistaken than that a miracle should hapen. But all the phenomena which our Society investigates re contrary to common experience, yet we are persuaded hat some at least of them occur.

In view of these facts I do not believe that any reasonable erson would be inclined to assign limits to what phenomena ight accompany the appearance of a personality which, in ny view, was among the most potent influences which hisory records. Professor [Denis] Saurat has recently illustrated he vision of St. Peter which revealed to him the necessity of dmitting Gentiles into the Church by analogies with modern nstances of telepathy and no doubt other detailed applicaions to New Testament narratives have been made. But the hief interest of all this to the theologian, apart from its bearng on the reliability of the records, is the light which may be hrown on the significance of the supernatural in the life of hrist.

The attitude of Jesus toward His own "mighty works" is not easy to determine. On the one hand, when confronted b the messengers of John the Baptist with the question: "A thou he that should come?" He points to works of healir culminating in the raising of the dead and puts along wit them the fact that "the poor have the good news proclaime to them." It may be that these "mighty works" are to be u derstood in a figurative sense, that the lame in spirit walk, th spiritually blind see and the spiritually dead are raised up, b I think this is unlikely and that the Evangelist at least mea the words to be taken literally. On the other hand, Jesus sa that it is an evil generation which seeks for a sign. We ma perhaps conclude that He attached a quite secondary impo tance to the supernatural powers which He exercised, but th He considered them to have value as arresting attention a giving confirmation of his unique character and mission. T result of a fresh consideration of the miraculous narratives the light of modern psychical research would go some way confirm this point of view. Obviously the old-fashioned "a gument from miracles" receives no support. That depend on the assumption that the miracles of the Gospels we unique, and evidently we shall not help that assumption finding analogies to them. But the occurrence of these remar able phenomena is at least congruous with the belief that t Person who caused them was unique. Spiritual power mig be expected to manifest itself, not only in teaching and hero action, but by the use of psychic capacities for spiritual pu poses.

I now turn to the subject which to many appears the on important one—that of survival. Among those who are co vinced that psychical research establishes, or goes near to e tablish, survival of bodily death there is much natu impatience with theologians, because they have been so sl to avail themselves of the help which was at hand. I have ready said that I admit the theologians have been excessive timid on the whole in this matter, but I must add they ha reasons for hesitation which are worthy of respect. The m important reason is that they are not sure of the ground; th do not know whether the belief in survival, which might supported by psychical research, is really a spiritual belief all. Christian thinkers of many different schools ha expressed this doubt. They would say, the belief that hum personality survives death is not, as such, a religious beli nor has it any spiritual value. The only immortality which worth having and which forms a part of the Christian hope fe in the presence of God. That this personality just as it is ill go on after the dissolution of the body is not necessarily ood news—it may be very bad news. The religious man ould desire a future life only insofar as it offers new oppor- nities of spiritual progress and closer communion with God. ome of these theologians lay stress upon the distinction be- veen the future life and eternal life, by which they mean life terpenetrated by the eternal values. Some, it seems, regard e question of a future life almost with indifference on the ound that the eternal life which is not subject to the limita- ons of time may be ours here and now.

We must admit that there is some good ground for the sus- icion with which many theologians regard the empirical roof of survival. Heine said that most believers would be erfectly happy without God if they could be sure of their wn immortality; they needed Him only as a guarantee that ey would not perish. No one would doubt that Christians of is kind exist and no one would doubt that they are very bad hristians. History and modern experience show that exces- ve concern with the question of one's own survival and that one's friends may have a deleterious effect on the life of e spirit. Historians of Hebrew religion have pointed out the aradoxical fact that it was partly because the Hebrews had belief for a long time in personal survival that their nception of God was able to develop along lines quite dif- rent from those of the other Semites.

But when all this is said, I cannot agree that Theology may fely ignore the empirical evidence. In my opinion, the only guments for personal immortality which have any value de- end upon the belief in the existence of God; and further no nceivable accumulation of evidence could prove the reality everlasting life. Plainly the evidence could, at the most, ow that some persons survived bodily death, but it could ot show that all persons did, nor could it show that any per- ns triumphed over death so that it had no more dominion ver them. The possibility would remain that extinction over- ok them in the end. Nevertheless, within these limits. the istence of empirical evidence for survival would, I think, ve important religious and theological consequences.

There are some minds which are wellnigh impervious to hilosophical and theological reasoning, but which capitulate facts. I do not doubt that a demonstration, if such a thing uld be imagined, which convinced everyone that a particu- individual who had died was communicating with his friends would have a profound effect on the outlook of t majority of people and that this effect would be to incli them to a religious view of life. But I would go further. seems to me that, however firmly persuaded a man might on other grounds that the soul is immortal, he ought to w come facts which tend to confirm belief that death is not nal. For the standing difficulty is this, that death appea indeed to be the "bourne from which no traveller returns Beyond there is silence. The voice which we once heard hear no more, the thoughts which we once shared we sha no longer. However great our faith or our reliance on arg ments of reason, we cannot stifle the conjecture that the "all their thoughts perish." To me at least it would be a m mentous thing if I could be sure that a thought had come me from one whom I had known on earth and was now longer among those we call "the living."

Has this happened? or to ask a more modest question, H psychical research produced any evidence which makes beli in survival more probable, from a strictly scientific point view? You will not expect me to sum up at the end of a le ture a complex and controversial problem, nor do I imagi that my personal views are likely to have any considerab value, but since the relation of psychical research to Theolo does depend, to some extent, on the question of what hop of a positive result from these inquiries may be entertained. feel that I should be shirking an important issue if I did n give my opinion for what it is worth.

One is sometimes tempted to believe that some power- whether beneficent or malevolent I do not know—has dete mined that we shall never reach certainty on the subject the life beyond and that to secure this it has sent a lyi spirit into the prophets. The records of psychical research a full of deceit, fraud, and illusion. But when one has discou ed all this there remains a residuum of established fac which, prima facie, suggest the hypothesis of survival; that least is my opinion. I am confirmed in this conclusion by o serving that several eminent philosophers, who for vario reasons are reluctant to accept the survival theory, have cently been led to put forward alternative theories which, effect, admit some kind of persistence after death, though n personal persistence. I refer, of course, to the various for of the "psychic factor" hypothesis. I suppose that these p

osophers have convinced themselves that telepathy between
e living does not account for all the phenomena, and in
is they are surely right.

Professor H. H. Price, in his Presidential Address, de-
eloped a theory on the lines of the psychic factor to explain
ertain types of haunting in which he used the conception of
n "ether of images." With modesty as rare in a philosopher
s it is praiseworthy, he conceded that his theory might turn
ut to be "nonsense" and that it could be torn in pieces by a
ompetent second-year student of philosophy. I am certainly
ery far from thinking that the theory is nonsense and I have
ad enough experience to know that many ideas which suffer
nnihilating dissection at the hands of second-year students
urvive as useful guides along the path to truth in the minds
f wiser men. No doubt this is the case with the President's
ascinating hypothesis, but I confess I found myself saying,
How much simpler to believe in ghosts!" Of course, the re-
ection was stupid, because it is by no means simple to be-
eve in ghosts or indeed to say what believing in ghosts
eans. Nevertheless there was perhaps a serious thought be-
ind the frivolous exclamation.

I think it was this. Unless I am mistaken, every theory
hich employs the concept of a "psychic factor" existing
part from a psyche must hold the possibility of what Mr.
radley used to call "floating ideas." The word "factor" is a
ague one and I confess I do not know what it means in this
onnection. The word "psychic" is not vague. It means, I sup-
ose, anything that may be an element in the experience of a
syche, such as thoughts, emotions, feelings, conation and
cts of choice. The phrase "psychic factor" seems to be a
ather confusing way of saying that thoughts, emotions,
eelings and all the rest have a kind of independent existence,
o much so that they may persist when there is no longer any
onsciousness which possesses them. The theory is generally
eveloped on the basis of the persistence of images, and here
erhaps it offers least difficulty, but, to confine ourselves to
e subject of haunting, these images seem, in some cases, to
e charged with emotion, and a feeling which is no longer
elt has a mode of existence which baffles me.

One is left with the question whether the idea of thoughts
hich are not thought, of images which are not conceived
nd of experience which is not experienced is really an intelli-

gible one. There is at least no evidence of the existence such "floating ideas." If the believer in survival is confronte with the alleged fact that we have no knowledge of any co sciousness which is not associated with an organism, he ma reply, with even greater force, that we have no knowledge psychic factors except in relation with a psyche. In view the perplexities which arise when we try to make clear th meaning of a "psychic factor" I should be inclined to expe that this very limited advance toward the hypothesis of su vival will have to be amended and that any amendment wi bring it nearer to the ordinary conception of the survival the self.

Since in this part of my lecture I am perforce giving sim ply my own opinions, I may be allowed to add a comment the idea of survival. One of the objections made against as an explanatory hypothesis is that it is vague, indefini and obscure, that its meaning needs to be defined. After gra pling with some of the alternative hypotheses, I confess th this particular objection strikes me as odd. Indeed I shou have said that one of its chief virtues is its simplicity and i telligibility compared with the complexity and abstruseness its rivals. No one questions that the application of the h pothesis to the facts offers many problems, but the hypothes itself could be stated, I should have thought, in words which everyone attaches a meaning. Personal survival is th hypothesis that the center of consciousness which was in exi tence before death does not cease to be in existence aft death and that the experience of this center after death h the same kind of continuity with its experience before deat as that of a man who sleeps for a while and wakes agai The difficulty that our experience is largely that of states an changes of our bodies is certainly formidable but not, I thin decisive. We have at least in Professor Price's Presidenti Address some valuable suggestions toward the conception a "spiritual body" which has a real continuity with the bod of flesh. I repeat, the survival hypothesis may be hard to a cept, but I cannot think it is hard to understand.

This lecture has, I fear, been rather of the nature of obse vations on several topics and I should be the last to clai that it has established any conclusions. It is no excuse to sa that I have labored at it, for I fear in the result I have bee like the poet spoken of by Alexander Pope, "sleepless myse o give my hearers sleep." I must plead that the subject is ew and very large. It may have been worth while to try to ap out the country which, as I think, waits for theologians o explore.

FAITH AND SCIENCE

William V. Rauscher

The age-old relationship between religious tradition an psychic phenomena that appear to be "miraculous" o "prophetic" has found new impetus among modern church men. The Reverend Canon Rauscher, Rector of Chris Church in Woodbury, N.J., is past president of Spiritua Frontiers Fellowship and an Honorary Fellow of the Interna tional Institute of Integral Human Sciences of Concordi University in Canada. He has had a unique ministry in th fields of religion and parapsychology and is author of Th Spiritual Frontier *(1975) and co-author of* Arthur Ford The Man Who Talked with the Dead *(1973). The followin paper is an adaptation of a lecture given at the Internationa Symposium on "Life, Death and Psychical Research," Mon treal. March 4-6, 1977.*

We are faced with a number of key questions centerin around the relationship between Christianity and parapsychology. First of all: Why is it that the Church—what the popular media call "organized religion"--suffers continuou attrition, while occult and Oriental ideas have experienced marked increase in popularity during the past decade? Second: Why is it that our churches encourage a dichotomy between themselves and responsible, respectable seekers in th field of psychical research? My third question is: Why ha the Church, keenly aware of its own lack of appeal to th generations that have come to maturity in the 1960's an 1970's, failed to appreciate their obvious need for spiritua and mystical guidance? The mystical content of Christianit is, and always has been, right below the so-called organize aspects. It does not take much to scrape away accretions tha hide beauty and inspiration just below the surface.

Many who are prominent in our churches fear reckles psychic dabbling, which goes counter to the concept of Christian spiritual disciplines. Yet, like any medicine, a controlled quantity is beneficial, while excess can lead to disaster. Any habit, even a good one, will become an addiction when it is overdone. And so I reject the anxieties of those who are almost neurotically anxious over the dangerous temptation of psychic excesses. There is, after all, even such a thing as addictive piousness; give me someone, outside a monastery, who prays and meditates for hours and hours on end, and I'll show you someone who is escaping from reality and seeking refuge in a world beyond the daily cares that we must face without hesitation.

We need not be concerned with excesses, but with courageous and sensitive concerns on such matters as the constructive uses of prayer, the healing power that is directly related to Christ's ministry of healing, and the deeper understanding of the world beyond that we seek to comprehend when we concern ourselves with life after death. Above all, the great and beautiful tradition of Christian mysticism must be seen as part of the existence for which we strive, and which we eek to recapture, revive, make part of this material cenury—at a time that teaches us just how limited the material eally is, be it in energy, rainfall, arable land available for ood supply, and even the resources of the sea. It is not hyperbole to speak of the fact that only one resource is truly inxhaustible, and that is the resource of the spirit, the inner growth, the resource within each one of us, directly linked to mystical relation with Jesus.

My concern with the dichotomy between the psychic and he modern Church is powered by the human tragedies, folies and fumblings that I observe every day. We need be irectly concerned with individual human problems, with eople who are lost somewhere in the desert of our endless ighways, their billboards, diners, and single-level discount tores; that is the desert of our existence, the desert in which we are looking for an oasis.

The fads through which many have passed during years of piritual escapism are centered on the individual. That has een true of the drug culture, with its "trips" into a brilliant ut dangerous unknown within the human mind. It has been ue of every passing fancy, from group therapy to all the hools of meditation. The whole consciousness-expansion yndrome is filled with the first person singular: I, I, I!

This is a cry of desperation, a direct descendant of the

literature of alienation that has also been fashionable, b
seems to have had its day. To be alone, to be alien, to wa
to expand one's consciousness with drugs or non-drug "trip
can easily become psychic or psychological self-indulgen
Yet, it depends on how it is done—and motivation is mo
certainly not beyond positive factors, beyond what in a wid
sense we might unhesitatingly call redemption.

Where can we start in regaining spiritual, and indeed my
tical qualities, if not in ourselves? If, as fathers or mothe
we are not strong and whole, we cannot pass strength
wholeness on to our children.

The "Me Decade" can be an appropriate label, as long
the "me" is part of the family, the community, and the wid
responsibility that our living with one another demands. It
eminently appropriate that the questions that concern ou
selves here today be seen in terms of each individual . . . b
also of all of us, together. What we need, above all, is hones
That means honesty mainly with ourselves. It is difficu
enough, and we shouldn't confuse it with the artificial hones
in a group therapy session, where insulting one another
considered a healthy outlet for aggression, for getting t
kinks out of your soul. It is difficult enough to be honest wi
one's self; and not without risk, because a measure of se
deception may be necessary to keep going to maintain hop

Having said all this, and having been perhaps a bit mo
candid with you than you expect, or even like, from someo
who dresses the way I do—having said all that, I hope that
have established a framework for the questions to which n
talk is devoted. Within the overall framework of the ther
"Life, Death, and Psychical Research," the relationship b
tween Christianity and parapsychology has a very speci
meaning.

You have heard of the work done by Drs. Raymo
Moody and Elisabeth Kübler-Ross, and of the pioneering
forts in life-after-death research undertaken by Dr. Kar
Osis. Frankly their findings did not come as a surprise to m
or, for that matter, to hundreds of other clergymen who ha
ministered to the dying. The deathbed experiences whi
form the core of current interest in life-after-death resear
are common to those of us who have seen hundreds or ev
thousands move through the gate of death, with our presenc
prayers and hopeful consolation.

We cannot talk about these matters because our professi
has an even stricter code of confidentiality than does that

e medical or law professions. But life after death is a reality at clergymen encounter numerous times. This has given us spiritual certainty that may even make us perhaps too matr-of-fact about the reality of an after-life. When we read or ar about the experiences from beyond, brought back by a tient who has been considered technically dead but has en resuscitated, we tend to say, "But of course, that is what ppens!" We have seen men and women on their deathbeds, ossing and recrossing the frontiers between this existence d the next; they speak of visions, of friends and relatives in e world beyond, and even of encounters with the Deity itlf.

This sort of experience is not routine. But other clergy can oubtlessly testify that it is frequent enough for us to nod our eads when we hear researchers speak of case histories they ve collected from the dying and the seemingly dead. We, ter all, speak the words, "Life Everlasting" not only more ten but also with more direct comprehension than do most hers. That is part of our parish task. The intimations of at special reality of "life after life" are stronger in our prossion than in almost any other—and I include physicians d nurses, whose orientation is not so much toward making e transition from this life to a life beyond death a spiritual, lfilling one, but who must try to steer the patient away om the gate that leads to an existence beyond our present e.

We come to the theme of life and death with convictions a specific kind. We welcome the efforts of researchers, beuse they confirm our traditional concepts. A Christian who oks at parapsychology must have a special fondness for its searches, because the very things of which the Judeo-Chrisan tradition speaks involve psychical and parapsychological udy. Our communion with Christ and our loved ones blends to the communion of saints, angels and archangels, the hole company of heaven, and the entire heritage of our ystical Jesus; everything related to it, in the world of the nseen, has parallels in the studies of modern parapsycholy. Parapsychological experiences, including telepathy and airvoyance, need not be religious, but they most certainly ve religious implications.

The Church has much to gain from these studies, and uch to offer. Science, which was once called "faithless ct," and religion, which can be labeled "factless faith," have day found a meeting ground. John E. Bentley, late dean of

American University in Washington, D. C., once state
“Science walks with humble feet to prove the God that fai
has found.” The religion of mere moralistic behavior is ove
Dr. J. B. Rhine, who developed modern parapsychology
this country and pioneered its methods for the whole worl
has spoken in challenging terms of the relationship betwe
Christianity and parapsychology. He has observed that telep
thy in its religious form comes close to prayer and compar
the capacity of seership and revelation to clairvoyance. Rhi
sees the mind-over-matter phenomena of psychokinesis,
PK, as the equivalents of the physical miracles of religio
tradition; he speaks of “the miraculous powers that were b
lieved to be conferred upon many by divine agency—as, f
example, spiritual healing.” Although I know of no maj
study or contribution to parapsychology in Judaism, both t
Old Testament and New Testament are replete with refe
ences to paranormal happenings. These events may be inte
preted in many ways, but the mystical tradition remai
especially when it involves such topics as angelology a
prophetic inspiration. Even worship must be viewed as
paranormal extrasensory encounter, and prayer itself is esse
tially a nonphysical activity taking into account the transce
dental dimension.

Rhine has said: “Physical conditions of space, time, bar
ers and instrumentation are all transcendent. This is rath
closely identical to the characterization of spiritual exchan
in religion. Whatever else spiritual means, it does definite
imply an extraphysical type of exchange. In fact, this is t
basis of the concept of the supernatural or miraculous in re
gion.”

Rhine abandoned laboratory studies of life after death
the 1930’s when he discovered that the methods of paraps
chology did not enable him to differentiate between messag
from discarnate entities, or spirits, and the telepathic or cla
voyant impressions of the mediums he had as subjects in
laboratory at Duke University in Durham, North Caroli
Outside the laboratory, research with mediums has gone
There are pitfalls in a nonspiritual approach to this kind
inquiry. Mediums and psychics are not made holy by the t
ents they show, any more than the character of a concert
anist or sculptor is ennobled by his talent. A fortune tel
may do brilliantly in getting impressions from a tea cup, b
show no interest whatever in the higher life. Similarly, you
people replete with taste and beauty of soul may far surp

ose who have read every book on parapsychology or even
me who are attentive to church but ruthless in their
alings with family and associates.

People, then, can be psychic but not necessarily spiritual.
any want to be psychic, but do not wish to adopt the eth-
al and spiritual disciplines which ought to accompany it.
hen someone wishes to be psychic, we should ask, "Why do
u want this? What are your motives? What is your aim?"
he paths of psychic development twist and turn in many
rections. It is easy to become lost in the forest of the un-
ual. Remember, it is easy to counterfeit the "gifts" of the
irit; it is more difficult to fake the "fruits" of the spirit.

Some questions which can serve as guidelines in respect to
ychic and occult problems for clergymen have been well
ted in a "Report on Occult and Psychic Activities" pub-
hed by the United Presbyterian Church in the United
ates, and prepared by its Advisory Council on Discipleship
d Worship:

1. Does the psychic event or phenomenon lead us as total
rsons—heart, soul and mind—to love the Lord our God,
tting no other gods before him, and to love our neighbors
ourselves?

2. Does it witness to the sovereignty of God as the ulti-
ate source of possibility, power and resources, or is it ego-
ntric and manipulative, concerned primarily with private
wer?

3. Does it honor God's chosen means of self-revelation; his
n, his Word, and his Spirit?

4. Does it honor God's creation, both nature and human-
y, in terms of fostering wholeness, reconciliation, and a pos-
re of self-sacrificial servanthood rather than exploitation in
th personal and societal terms? Are "the unlovable" and
e enemy given at least equal status within this redemptive
amework? Is human need, bodily as well as spiritual, an
m of concern and action?

5. Is it open to the infinite variety of God's work in the
orld, with humble recognition that "His ways are not our
ys," leaving room for unknowns, for natural and general
velation, for fellowship with any and all human beings,
hatever their faith, ethnicity or theology, providing they do
t despoil the human or seek to subvert love and commu-
ty?

6. Does it produce in the long run the "fruits of the

Spirit”: love, joy, peace, patience, kindness, goodness, fait
fulness, gentleness, and self-control?

7. Does it promote humility, a recognition that we do n
yet see God “face to face” but only “through a glass darkly
that much is yet incomprehensible or unknown, that we y
have much to learn and perhaps to relearn about his ways?

Certainly, there must be safeguards, and the Church has
be cautious. But you cannot develop effective safeguar
against something you do not know about. You must know
disease in order to develop a method that will bring abo
immunity. If we are too cautious about the risks we encou
ter in daily life, we will not want to get out of bed in th
morning, will not dare to climb down a flight of stairs, an
certainly refrain from crossing the street! But that is not li
ing. It isn’t spirituality, and it isn’t science, and it isn’t withi
the tradition of Jesus Christ who dared the society with
which he lived by what those of little faith, or none at a
saw merely as too novel, too presumptuous, too untradition
to even know about.

Of course, within a body as vast as the Church—th
church of virtually all denominations—there are individua
of daring. The history of psychical research would not
complete if it were not for churchmen, or laymen with re
gious interests. Much research in this field has been done
Great Britain. A British authority, Canon John D. Pearc
Higgins, in a paper on “The Church and Psychic
Research,” has pointed out that Catholicism has always ha
direct reference to an after-life, “a place both for the dea
and for the supranormal.” The continuing “belief in interce
sion of the saints, as well as the search for and investigatio
into alleged miracles has kept alive the sense of the intera
tion of the Church triumphant with the Church militant, an
also stimulated an interest in the miraculous or paranormal
Renée Haynes, editor of the *Journal* of the Society for Ps
chical Research in London, has made a detailed study of a
eighteenth-century cleric, Prospero Lambertini, whom sh
called the “father of Christian psychical research,” and wh
became Pope as Benedict the Fourteenth. He linked paraps
chological phenomena to religion but distinguished careful
between the paranormal and the divine.

We have, here in North America, the Spiritual Frontie
Fellowship, and I had the privilege of serving as the organiz
tion’s president from 1964 to 1968. In England, there exis
the Churches’ Fellowship for Psychical and Spiritual Studie

n which numerous clergy are affiliated. Both organizations tinue a long tradition. One of the leading figures in the ory of religion and psychical research was the Rev. liam Stainton Moses, who published widely in the field, founder and president of the London Spiritualist Al- ce, edited the periodical *Light*, and was a co-founder of prestigious Society for Psychical Research. I visited his veside in the summer of 1974, at Bedford, in England, noted that his life on this level of existence lasted from 9 to 1892. As I looked at the inscription on the grave- ne of this Anglican priest, I was struck by how similar and temporary are the thoughts, drives and energies of the eteenth century to those of this day. Individuals are still ved to explore the uncharted inner worlds of conscious- s. The custodians of "mystery" are many and they all ped lead us to the present.

he very reason for the establishment of psychical research the desire, deep in the hearts of distinguished scholars—nen as well as men—to build a bridge between religion psychical phenomena, without surrendering to the seem- y all-pervasive materialism that threw its shadow over the ond half of the last century. British psychic researchers be- their work during a period of spiritual dilemma, brought by Charles Darwin's findings on human evolution. The president of the Society, the noted psychologist Dr. ry Sidgwick, personified the motivation behind the or- ization's original research program, while being deeply cerned with human ethics and conduct of behavior. The ics of Christianity provided him with a strong motivation thought and research in the field of the psychic.

leading figure in this tradition, the Rev. Leslie D. atherhead, died in 1976 at the age of eighty-two. He was ast president of the Methodist Conference and from 1936 1960 he served as minister of the City Temple in London. had this to say: "By healing . . . is meant the process of oring the broken harmony which prevents personality, at point of body, mind or spirit, from its perfect function- in its relevant environment; the body in the material ld; the mind in the realm of true ideas; and the spirit in elationship with God."

Veatherhead's book, *Psychology, Religion and Healing*, lished some twenty years ago, can be read as an enriching erience today, and for decades in the future. And I am just talking about reading such works as an individual. I feel that in study groups, and surely in Christian seminar such readings should take place as part of survey courses the whole area of Christianity and parapsychology. In own book, *The Spiritual Frontier* (1975), I presented a bi ography of suggested reading that took up nearly sixt pages.

Our theological seminaries face the very obvious and r vant task of including parapsychology in their curriculae. the very least, the clergy should be well prepared to ans questions, hold study courses and deal in sermons on s themes as "Prophecy and Precognition," on psychosom elements and spiritual factors in healing prayers, on such f dist but important themes as exorcism, reincarnation, haun houses, and everything from the Bermuda Triangle to Apocalypse. It certainly isn't satisfactory for the question mind to find reports on such alleged or real phenomena most exclusively in sensational weekly tabloids, but the f quency with which such events are reported in the popu periodicals shows how deep the public's interest is.

Why, then, does the Church still hesitate to deal w parapsychology, and is even fearful of it? The answer is pl ignorance; not only fear of the unknown, but simply knowing what is going on. We are not dealing with dem and witches, but with science, and with the deeper needs the human soul, of which we still know too little. In much what parapsychological research has found, the central sign cance is the incredible interrelationship of all of us with another—by telepathy on occasion and in startling terms, in more subtle and less easily traceable ways presumably the time.

No one can deny that there are pitfalls. It is only too e to be impressed by what appear to be authentic psychic periences, and to ignore alternative explanations. Psychic velopment pursued for the mere purpose of developing talent is a form of vanity and can be dangerous. One can misled by false claims in advertisements; self-styled prof sional psychics encourage those who seek a substitute for fulfilled emotional needs. Mentalists who appear on televis and pretend to be psychics are sailing under false flags. So people think they are experiencing "revelations," but chan are that delusions, obsessions and frustrations, neuroses other forms of emotional disturbance may be at the core these impressions.

Psychic or spiritual development should result in an i

ated personality. Emphasis should be placed on prayer,
editation, contemplation and worship as stabilizing elements
r a balanced inner life. Drugs are no shortcut to the psy-
ic, but the road to delusion. Various devices, such as the
uija board, the planchette and automatic writing, can lead
a breakthrough of otherwise controlled volcanic subcon-
ous forces; they are best avoided.

I stand, then, firmly in the middle, I favor detached study,
tient inquiry within an appropriate spiritual framework.
ut I am against denial. I am against fear. I am against the
rogance of ignorance. It is as simple as that.

IV.

BIOLOGY AND PARAPSYCHOLOGY

OUT-OF-THE-BODY EXPERIENCES: A PSYCHOPHYSIOLOGICAL STUDY

Charles T. Tart

Dr. Tart, who is Professor of Psychology, University of
alifornia, Davis, notes that "applying scintific methods to
aditional religious phenomena" offers "a more rational ap-
roach than simply throwing them out." His work in parapsy-
iology, which began some two decades ago, has suggested
iat "man has potentials that are certainly unexplainable in
rms of our current understanding of the physical world."
s a psychologist, Tart has found that "we usually misuse
hat potentials we have, and live in a state of neurotic illu-
on whether the title of that illusion is 'religious' or 'scien-
fic.'" The following article on out-of-the-body experiences
escribes a project that, in an older terminology, would be
kin to that of someone who felt their "soul" had left their
ody, Dr. Tart comments: "One study never solves any prob-
ms when there is a great deal of research left to do, but it
lustrates how we can begin to apply scientific methods to the
nd of phenomena that early materialists ruled out com-
etely." Among anthologies edited by Tart are States of Con-
iousness *(1975) and* Transpersonal Psychologies *(1975).*
his paper, titled "A Psychophysiological Study of Out-of-
e-Body Experiences in a Selected Subject," originally ap-
ared in the Journal of the American Society of Psychical
esearch *(Vol. 62, No. 1, January, 1968).* Copyright © 1968
the American Society for Psychical Research, Inc.

Introduction

Out-of-the-body (OOB) experiences have always been peripheral problem in psychical research in spite of the fa that their important implications for the question of surviva as well as their inherent interest, have long been recognize This neglect has been due to the fact that an experiment approach to the study of OOB experiences is extremely diff cult. In the vast majority of reported cases, the experience occurred only once in the lifetime of an otherwise "ungifted person. The occasional persons who have claimed to produ such experiences at will[26,44,64] have, by and large, not been investigated by psychical researchers, although the reason f this lack of investigation is not clear. The few "experimenta attempts to produce such experiences have almost exclusive been older attempts involving the use of hypnosis.[8,21]

Thus we have a phenomenon whose occurrence is qui rare, which we do not know how to produce experimentall and whose "spontaneous" occurrence cannot be predicte We cannot study a phenomenon very thoroughly which do not occur when we are prepared to study it. Aside from Ho nell Hart's excellent beginning work[29,30,31] and some rece work by Robert Crookall[10,11,12] on the *experiential content* reported OOB experiences and some of their reported ant cedents, we know virtually nothing about the nature of su experiences and their possible causes.

I have been interested in OOB experiences for seve years and have often talked about this phenomenon with a quaintances. During a conversation with a friend (whom w shall call Miss Z) a couple of years ago, she reported that s had spontaneous OOB experiences approximately two to fo times a week and that she would be interested in bei studied in the laboratory. As this afforded an unusual opp tunity for research, I studied her for four nights in a sle laboratory in order to determine what, if any, psychophysi logical correlates of her OOB experiences occurred. This p per will describe Miss Z and her spontaneous experience and report on the psychophysiological studies which were ca ried out.

Description of Miss Z

Miss Z is a young, unmarried woman in her early twenties, th two years of college education. Her education was tem- rarily interrupted at the time of this study because of her ed to work in order to earn money to continue at college. e is a warm and highly intelligent person, and had great in- rest in what the study would show.

Psychologically, it is extremely difficult to describe Miss Z. y informal observations of her over a period of several onths (undoubtedly distorted by the fact that one can never scribe one's friends objectively) resulted in a picture of a rson who in some ways was quite mature and insightful, d in other ways so extremely disturbed psychologically that times, when she lost control, she could possibly be diag- sed as schizophrenic. Miss Z came from a broken home. e recounted a number of instances of apparent parapsy- ological interaction between her and her parents as well as tween her and her foster parents. She had been hospitalized several weeks for psychiatric treatment about a year prior the present study. Despite numerous psychological difficul- s in her personal life during the several months over which e experiment was carried out, however, Miss Z did not in- ject her personal difficulties into the experimentation.

Miss Z's OOB experiences were almost all of one kind. She ould wake once or twice during a night's sleep. Each time e would find herself floating near the ceiling, but otherwise emingly wide awake. This condition would last for a few conds to half a minute. She frequently observed her physi- l body lying on the bed. Then she would fall asleep again d that was all there was to the experience. As far as she uld recall, these experiences had been occurring several nes weekly all of her life. As a child, she had not realized at there was anything unusual about them. She assumed at everyone had such experiences during sleep, and never ought to mention them to anyone. After speaking about m to friends several times as a teenager, however, she real- d that they were looked upon as "queer" experiences, and e stopped discussing them.

At the time of the experiment, she had never read anything out such experiences. After initially hearing about her ex- riences, I asked her to refrain from reading anything about them until our experiments were completed, and she com plied with this request.

Note that Miss Z had never made any attempts to contr her OOB experiences, nor did she attach any great signi cance to them. She definitely felt that they were *not* dream but she was otherwise puzzled as to what they were.

On a few occasions Miss Z's OOB experiences had seem to transport her to distant locations, rather than just floati above her body. One experience she reported is particular relevant here. It is not certain whether it was a nightma with elements of ESP in it, or a genuine OOB experience. about the age of fourteen, she had a vivid "nightmare" which she found herself walking down a dark street in deserted part of her own home town. She noticed the cloth she was wearing, including a checked skirt; she realized th she did not own any clothes like this, and felt that she was someone else's body. Someone was following her, and s was terrified. This person caught up with her, raped her, a then stabbed her to death. Miss Z's memory of what ha pened near the end of this sequence is very poor, but s awoke quite disturbed and horrified because this "nightmar had seemed so terribly real. She reported that the next d there was a story in the newspaper about a girl who had be wearing a checked skirt having been raped and stabbed death the previous evening in the part of town correspondi to her "nightmare" locale. This experience made a conside able impression on Miss Z and will be relevant to one of t events which happened in the laboratory, described below.

Preliminary Experiment

My interest in OOB experiences has two separate face On one level, I am interested in such experiences as a uniqu psychological *experience*, possibly related to nocturnal drea ing. On another level, I am interested in the extrasensory pects of the experience: in some OOB experiences the pers reports accurate information about the distant localities seemed to be at, and such information would apparently ha to have been acquired by some form of extrasensory perce tion. Thus we have a unique psychological experience, wort of study in its own right, as well as an experience that oft seems to have parapsychological aspects.

In my initial talks with Miss Z, I explained to her tha as interested in her OOB experiences from both of these ints of view. I suggested that she carry out some observa- ns on herself at home before we began all-night laboratory dies, in order that she might distinguish for herself whether is was a vivid type of dream experience only, or whether it o possessed parapsychological aspects. At my suggestion, en, Miss Z carried out the following procedure.

She prepared ten slips of paper with the numbers one to n on them and placed them in a large cardboard box. Each ght, after getting into bed at home, she shook the cardboard x to randomize the slips of paper, and then, without look- g into the box, drew out one slip of paper and put it on r bedside table. She could not see the number on the piece paper from her position in bed, but anyone with a vantage int of several feet above the bed would be able to read the mber clearly. If she awoke while experiencing floating near e ceiling that evening, she was to memorize the number, d then check on awakening in the morning to see whether e had perceived it correctly.

When I saw her two weeks later, she reported that she had ed this for seven nights and found she had been correct ch time on checking in the morning. While this cannot be ed as evidence for some form of extrasensory perception, it depends entirely on the subject's word, it did suggest at the possible parapsychological aspects of Miss Z's OOB periences could be studied as well as the psychological ex- rience *per se*.

Laboratory Procedure

I was able to observe Miss Z in my sleep laboratory for ur non-consecutive nights, over a period of approximately o months. The procedure was essentially the same on all ghts, and will be described here.

Miss Z's electroencephalogram (EEG) was recorded each ght as follows. Grass silver disk electrodes were applied to vertex, the right occipital area, and the right frontal area gh on the forehead just below the hairline). Recording of EEG was bi-polar, frontal-to-vertex, and vertex-to-occipi- . Recording was continuous through the night on a Grass del VII polygraph, running at a speed of ten millimeters r second.

Rapid eye movements (REMs) were recorded by means of

a miniature strain gauge, taped over the right eyelid. Th
technique for recording REMs is described in detail el
where.[4,58] Movement of the eye under the closed eyelid d
torts the strain gauge and a corresponding electrical output
recorded on the Grass polygraph. This combination of t
EEG channels and a REM channel is typical in sleep stud
and allows one to discriminate the various stages of sleep,
cluding dreaming sleep.

Basal skin resistance (BSR) was also recorded on t
Grass polygraph. Silver-silver chloride electrodes were us
one on the thenar eminence of the palm of the right ha
the other on the right forearm. These electrodes, describ
elsewhere,[45] have negligible polarization characteristics a
provide an accurate record of BSR. Galvanic skin respon
(GSRs) were recorded from the same electrodes at a high
sensitivity than BSR by capacitively coupling the output
the BSR channel into a high gain channel on a Sanborn po
graph. This latter polygraph ran continuously through t
night at a paper speed of one millimeter per second.

On two of the four nights, heart rate and digital blood v
ume were measured by means of a Grass model PTTI fin
photoplethysmograph. This device transmits a beam of lig
through a finger, and measures the amount of light transm
ted by means of a photo cell.[7] The output of this photo c
reproduces the pulse wave, allowing heart rate to
measured, and the amplitude of this tracing varies with var
tions in the blood volume in the finger. Technical difficult
with this device prevented its use on two of the four nights.

The sleep laboratory consisted of two rooms, each lin
with acoustic tile for sound attenuation. A large window w
between the rooms for viewing, but in this experiment it w
covered with a venetian blind in order that the subject's ro
could be reasonably dark for sleeping. This blind allow
enough light to come through so that the subject's room w
dimly illuminated, but not enough to disturb sleep. The po
graphs were located in the second room, and the door w
kept closed. An intercom system allowed hearing anyth
the subject said. I monitored the recording equipm
throughout the night while the subject slept and kept notes
anything she said or did. Occasionally I dozed during t
night, beside the equipment, so possible instances of sl
talking might have been missed.

The subject slept on a comfortable bed just below the
servation window. The leads from all electrodes were bou

o a common cable running off the top of her head, and
ninating in an electrode box on the head of the bed. This
angement allowed her enough slack wire so that she could
n over in bed and otherwise be comfortable, but did not
ow her to sit up more than two feet without disconnecting
wires from the box, an event which would show up on
recording equipment as a tremendous amount of sixty
le artifact. Thus her movements were well controlled. Im-
diately above the observation window (about five and a
f feet above the level of the subject's head) was a small
lf (about ten inches by five inches). Immediately above
s shelf was a large clock, mounted on the wall. Each labo-
ory night, after the subject was lying in bed, the physiolog-
l recordings were running satisfactorily, and she was ready
go to sleep, I went into my office down the hall, opened a
le of random numbers at random, threw a coin onto the
le as a means of random entry into the page, and copied
the first five digits immediately above where the coin
ded. These were copied with a black marking pen, in fig-
es approximately two inches high, onto a small piece of pa-
r. Thus they were quite discrete visually. This five-digit
dom number constituted the parapsychological target for
evening. I then slipped it into an opaque folder, entered
subject's room, and slipped the piece of paper onto the
elf without at any time exposing it to the subject. This now
ovided a target which would be clearly visible to anyone
ose eyes were located approximately six and a half feet off
floor or higher, but was otherwise not visible to the sub-
t.

The subject was instructed to sleep well, to try and have an
B experience, and if she did so to try to wake up immedi-
ly afterwards and tell me about it, so I could note on the
lygraph records when it had occurred. She was also told
t if she floated high enough to read the five-digit number
e should memorize it and wake up immediately afterwards
tell me what it was. My conversation with Miss Z after I
d prepared the target was, of course, minimal and could
t have given her any clue as to the target number. In fu-
e experiments, however, it would be preferable for a sec-
d experimenter, who had had no contact at all with the
bject, to prepare the targets.

The Nature of Sleep

As some readers may not be familiar with recent ps chophysiological findings on the nature of sleep, a brief r view of these will be presented here. More detailed reviev and evaluations of the more than one hundred studies of tl past decade which have so changed our view of sleep ar dream activity may be found elsewhere.[25,37,41,47,48,56,57]

Sleep may be defined in this paper as a stage of the orga ism indicated (in human subjects) by one of four EE stages.[16,17] The Stage 1 pattern consists of an irregular mixtu of theta waves (4-8 cps), random low voltage activity, occ sional isolated alphoid activity (waves of 1 to 2 cps slow than the subject's waking alpha), and occasional alpha wav (8-13 cps). Stage 2 contains spindle activity (14 cps) in a dition to the above, and Stages 3 and 4 contain an increa ingly larger proportion (up to 100 percent) of delta wave 1-3 cps, high amplitude, in addition to spindle activity. Tl exact divisions between Stages 2, 3, and 4 are arbitrar based on the percentages of delta waves in given epochs. Tl Stage 1 pattern is readily distinguishable from the oth stages by its total lack of spindles and delta waves.

Stages 1 through 4 were initially conceived of as co prising a continuum from "light" to "deep" sleep, [2,3,14] but other measures of the "depth" of sleep contradict this conce tion,[5,32,37,56,62] this paper will treat sleep as being of two qu itatively distinct types, namely, Stage 1 as one type and Stag 2, 3, and 4 as the other type. Distinctions between Stages 2, and 4 will not be made, and they will be collectively referr to as Nonstage 1 sleep.

If subjects are awakened from the two types of sleep a asked to report on what they have been experiencing, the ports may be classified into two rather distinct types. O type, awakenings from Stage 1 sleep or shortly (withi roughly, ten to fifteen minutes) after Stage 1 sleep h changed to Nonstage 1 sleep, possesses the characteristics t ditionally associated with the experience of dreaming. [24,51] R ports from Nonstage 1 sleep seem more like "thinking," a are generally called thinking by the subjects—these same su jects generally refer to their Stage 1 experiences as drean The psychological differences reported so far are quantitati

ther than being completely dichotomous, but they generally
ve the impression of being distinct types of experiences.

Stage 1 sleep is almost always accompanied by binocularly
nchronous rapid eye movements (REMs), and the evidence
very convincing that these are closely associated with the
ntent of the dream, if not actual scanning movements of
e dream imagery.[6,19,53] Such REMs have not been reported
Nonstage 1 sleep, although there are some slow, rolling
ovements.[37]

In view of these findings, the theoretical position taken in
is paper is that an experientially distinct type of phenome-
on occurs concurrently with the presence of Stage 1 sleep,
hich phenomenon will be called Stage 1 dreaming, or just
eaming. The mental phenomena of Nonstage 1 sleep will
ot be considered in this paper. Further, it is assumed that
e experience of Stage 1 dreaming is essentially continuous*
uring the presence of Stage 1 EEG, whether or not the sub-
ct can always recall this experience on waking. This posi-
on is, in my opinion, supported by all the studies using the
EG and REM technique, and directly refuted by none.

For normal subjects, Stage 1 dreaming and Nonstage 1
eep alternate in a regular cyclic fashion referred to as the
eep-dream cycle. As the subject falls asleep there is gener-
lly a brief (a few seconds to a minute or two) period of
tage 1, without REMs, but subjects' reports indicate that
is is apparently a period of hypnagogic imagery rather than
pical dreaming.[17,47] At approximately ninety-minute inter-
als through the night there are periods of Stage 1 dreaming,
ach dream period generally being longer than the preceding
ne. The first Stage 1 period may last for ten minutes; the
urth or fifth one may last as long as fifty minutes. Alto-
ether, Stage 1 dreaming occupies between twenty and thirty
ercent of the total sleep time of most young adults, spread
ver three to six Stage 1 periods. While the exact percentage
f dream time and the number of cycles varies from subject
subject, for a given subject the sleep-dream cycle is gen-
rally quite stable from night to night.[15,16,40,63]

---

* Within a continuous period of Stage 1 EEG, the content of the
perienced dream may be divided into several distinct episodes so
at, in a sense, there are several distinct "dreams" within a con-
nuous period of dreaming. Dement and Wolpert[19] present some
idence that such changes of topic may be accompanied by a
oss body movement on the part of the subject.

Results

Night I

The first night in a dream laboratory is usually considere
an adaptation night, with the data from it not being used
physiological studies. This is because of the so-called fi
night effect in which a subject is liable to skip his first Stage
dream period, and the content of his dreams is often ob
ously concerned with the fact that he is being experiment
upon.[1,20,50,59,61]

On her first night in the laboratory, Miss Z fell asle
rather rapidly, reached Stage 4 sleep within the first ha
hour after falling asleep, and then showed three Stage
dream periods during the course of the night. After the fi
dream period, there were scattered instances of prominent
phoid activity, that is, a Stage 1 pattern mixed with slow
alpha waves, and rather poorly developed sleep spindles. T
only unusual feature of this night was that the subject show
REMs during Stage 1 drowsiness at the *beginning* of sleep,
very unusual finding. Rapid eye movements almost never c
cur in normal subjects during drowsiness, although they ha
been found to occur frequently in narcoleptics. [18,36,49,52] The
is no evidence that Miss Z suffers from narcolepsy, howeve
and these REMs during drowsiness seem to be related to t
unusually vivid hypnagogic imagery that she reportedly e
periences on falling asleep.

Miss Z did not feel that she had had any OOB experienc
that night.

Night II

A number of interesting incidents occurred during Miss
second night in the laboratory.

As Miss Z went to sleep, she showed a drowsy pattern
ternating with a waking pattern for approximately the fi
ten minutes. Then there was a minute of a drowsy EEG p
tern consisting of occasional theta waves, some alphoid wav
(alpha waves of one to one-and-a-half cycles per seco
slower than her usual waking alpha), and a good deal of fl
tening of the record, ending in thirteen seconds of waking
pha rhythm, nearly continuous, and then a large bo

vement. With this body movement, Miss Z called out that was awake and that she had just had a sensation of start- to float up toward the ceiling immediately prior to her ving and calling out. The finger photoplethysmograph was ng used on this night, and her heart rate during this time s a steady seventy-one beats per minute, not in the least usual. Her BSR was steady throughout this time, no GSRs re seen at all, nor was there any body movement. Also, re were no REMs during this period.

Miss Z then went to sleep, quickly going into Stage 2 sleep, ich lasted for about half an hour, and then a half hour of ge 3 and Stage 4 sleep. This was followed by a short Stage dream. Her Stage 1 dream period showed a classical Stage pattern with REMs. This dream was followed by about an ur and a half of Stage 2 sleep, then twenty minutes of ge 1 sleep, and then another period of unusual EEG. For proximately one minute Miss Z showed a pattern of al- oid waves mixed with poorly developed, low voltage sleep indles. Then there was a two-minute period of alphoid ves superimposed on a generally low voltage pattern with spindles and no clearly developed theta waves. This was lowed by a minute of predominantly low voltage theta ac- ity, with very poorly developed sleep spindles present. This minated in a large movement and Miss Z awoke. There re no REMs during this four-minute period, heart rate was ady at seventy-four beats per minute, and BSR steady, th no GSRs. There were two small body movement arti- cts during the terminal period of slowed alpha without indles and one small body movement in the period of wed alpha and poor spindling which began this unusual G sequence. The sequence occurred at approximately 3:15 M.

Upon awakening from this sequence, Miss Z called out, rite down 3:13 A.M. I don't see the number, but I just member that." Although she did not say anything more, the plication, confirmed by conversation later on that morning, s that she had floated somewhat above her body, high ough to see the clock, but not high enough to see the target mber. Some further comments on this episode will now be de.

When going back to sleep, Miss Z showed a Stage 2 pat- n for an hour, had a dream of twenty-five minutes' du- tion following that, then showed some Stage 2 and Stage 3 the next hour. About fifteen minutes of record was then lost because of a paper jam. When recording was resume she was showing Stage 1 dreaming. This lasted for about t minutes, and then the record became rather difficult to cla sify. For a period of approximately ten minutes the EE consisted of a great deal of slowed alpha rhythm, no the rhythm, and a fair amount of flattening. It could not be cla sified clearly as either a sleep or a waking pattern. The were some occasional body movements, a fair amount REM activity scattered through, and some GSR activity. M Z then awakened by herself and reported that in the last fi minutes she thought she had floated in and out of her bo four or five times. Nothing else of interest occurred th night.

One day later, Miss Z told me that she had had a ve frightening nightmare during her previous night in the labo tory, which she had not reported at the time because of terrifying nature. She had wanted to forget it, but had r been successful. This nightmare had apparently occurred ju before she woke, called out the time, and reported that s had not been able to see the target number. I cannot be su of this, of course, as she did not report it at the time. T stimulus for now reporting it was that she had seen a tele sion news program the night following her night in the lat ratory which made her decide to write down an account her nightmare immediately because it seemed to coinc with an item in the newscast.

Because Miss Z did not report this material to me befo seeing the newscast, it cannot be considered evidential of e trasensory perception. As it is quite interesting psycholo cally, however, and fits in with the earlier traumatic incide of her childhood (described above) in which she had a nig mare or OOB experience coinciding with the murder of young girl, the material will be reproduced here. Her count, written *after* she saw the newscast, is as follows:

> Sunday night—vague nightmare—recalled previous experience?—blocking on much of memory—young girl (13 to 16?)—outdoors—stabbing, but not knife, more slender—head hurt (slapped?)—not stabbed, surely—expanse of white, car white?—knew fellow (*she* knew, not I!) who also youngish—horrible experience but no support in papers this morning—so far so good.

Miss Z told me that the television newscast said that a ung girl had been stabbed to death in Marin County. hether additional information was given in the newscast is t known.

I did not check the newspapers at the time; I wanted the ident to die down as Miss Z was obviously rather disturbed out it. Several months later I checked the newspaper files the library. Nothing had appeared in the papers until pril 20, 1965. Miss Z's second night in the laboratory had en the night of April 18th. Thus, as she had said, there had en nothing in the morning paper after she had seen the TV wscast. I do not know if she saw anything which appeared the paper after that. The following material has been taken om the April 20, 1965, edition of the *San Francisco Chron- le*. (I have left out details such as names and the like which e not relevant to Miss Z's nightmare.) The headline is "Girl ound Murdered in Marin." Marin is the county immediately ove San Francisco, about forty miles north of the labora- ry.

> A pretty Daly City high school girl was found murdered on a flower covered slope in Muir Woods in Marin County yesterday afternoon.
>
> She had been stabbed savagely in the head at least six times and her skull was crushed, Coroner Frank Keaton said. There was no indication that she had been raped. . . . The young victim was identified as Nonita—, sixteen. Nonita's boyfriend is also missing and is sought for questioning. . . . He is identified as Virgilio—, nineteen, a resident of a San Francisco hotel. He is driving a white 1960 Thunderbird, police said. . . . The victim was fully clad—though her underclothing was in some disarray—in a black sweater, red blouse, plaid skirt, tennis shoes, and white socks.
>
> Keaton estimated that she had been dead three or four days. . . .

In the *Chronicle* for April 21st, the information is given at the police are still looking for the boyfriend, and that the ar has been found. " . . . the murder weapon—a sharp, thin strument, a little thicker than an ice pick—was not und. . . . An autopsy showed that death came from six

stabs of this weapon into her head, one of them penetratin
the brain. . . ."

The *Chronicle* of April 22nd reports that the girl was mur
dered in the car, according to bloodstains and signs of
struggle found in the car. The Thunderbird was parked in
San Francisco parking garage late Friday night, and the bod
was apparently in it for attendants noticed a little pool
blood in the parking place after the car was checked out.

After a small notice on April 24th in the *Chronicle* tha
the FBI had entered the case, I could find no more informa
tion about the murder, though I searched the paper for th
next several weeks.

With respect to the parallels between Miss Z's nightmar
and the murder case, we note the following: (1) The victi
was a young girl of sixteen, as estimated in the dream; (2
the setting of the nightmare was outdoors and the body wa
apparently outdoors, where it was found, at the time of th
dream, although the murder took place in the car; (3) deat
was caused by stabbing with an instrument like an ice pick
not a knife; (4) Miss Z said her head hurt, that it wa
slapped, not stabbed; the girl was stabbed in the head and he
skull was crushed; (5) Miss Z saw an expanse of white in he
dream and thought it was a white car; the suspected mu
derer was driving a large white car; and (6) Miss Z said th
murderer, a "youngish man," knew the girl; the suspecte
murderer was a young man who was a boyfriend of the girl.

The parallels between this nightmare, the actual killin
and the incident Miss Z reported from her early teens is strik
ing. In the earlier nightmare incident, the girl Miss Z iden
tified with was also wearing a checked or plaid skirt. In on
sense, this entire recent incident may be a reactivation of th
earlier trauma. (As mentioned above, the nightmare can onl
constitute suggestive evidence for extrasensory perception be
cause it was not reported to me before Miss Z saw the tele
vision newscast.) An alternative hypothesis is that no nigh
mare took place in the laboratory, but that the TV news bu
letin triggered the earlier trauma in Miss Z's mind and sh
fabricated (unknowingly) the incidents of the nightmare.

Night III

On her third night in the laboratory, Miss Z went to slee
quickly and showed an ordinary sleep pattern for the fir
half of the night, that is, Stages 2, 3, and 4 alternating with

ouple of Stage 1 dream periods at approximately ninety-inute intervals. At 3:35 A.M. an unusual EEG pattern seuence started which will be described here. It began from tage 3 sleep, which was clearly defined by frequent, well-eveloped sleep spindles and clear, high voltage delta activity. hen there was a minute of large body movements, followed y five minutes of alphoid activity with no spindles, some attening of the record, and no REMs. Then there was anther minute of massive body movements, followed by a half inute of rather poorly developed Stage 1 EEG, that is, a attened low voltage slow pattern, but with the theta almost bsent and no REMs. Again there was a half minute of body ovements, and then five minutes of alphoid activity as beore. There were several bursts of twenty-four cycle per secnd rhythmic activity in the frontal channel during this ive-minute period, but it is not clear whether these were acually EEG patterns or some sort of external electrical artiact which happened to occur at this time. Then for two and half minutes the alphoid activity was less prominent, there as some theta activity, but still no spindle activity. Then ere were five minutes of record that could not be classified ecause body movements obscured almost all of it except for ccasional slowed alpha. Then there was a minute in which he EEG record was clear and showed alphoid activity preominantly, but the strain gauge REM channel showed all orts of artifact, such as one might get from tremors of the yelids. This was followed by seven minutes of alphoid activy, with some flattening, and continual interference and posibly tremor on the strain gauge REM channel. Then, after ome more body movement, there were three minutes of wakng alpha rhythm with high amplitude REMs. The subject ay very well have been awake during this brief period. hen followed a minute and a half of Stage 1 pattern with EMs (dreaming), although the theta was rather poorly deeloped. There were some occasional bursts of twenty-four ycles per second activity in both EEG channels again. This ave way to seventeen minutes of alphoid activity with no EMs and only a couple of small movements of the body attered through this period. There were occasional GSRs uring this long period of EEG disturbance. Then there were couple of minutes of Stage 1 EEG pattern, with occasional EMs (dreaming), and Miss Z awoke. She reported an OOB perience. After her final awakening later in the morning, e wrote a full account of this experience, as follows:

> I seemed to be flying, although too high and seemingly fast to recognize where I was; neither did I have any sense of where I was going. The flying disturbed me as I knew I was supposed to stand up in the room and read the number above my head. Therefore, I would rouse or questionably awaken and realize that I was still lying on the bed. Every time I drifted off to sleep I would resume flying, however. This was not preceded by any other activity—that is, there seemed to be no intermediate experience between falling asleep on the cot and flying. Finally, the third or fourth time I flew I decided to relax and let the experience come to completion.
>
> Very shortly (that is, in far less time than was objectively possible—I would say less than two minutes) I realized I was on my way home; that somehow my sister was involved in the experience. Essentially simultaneously with this realization I found myself in my home in Southern California, in the living room. Seated in the rocker was my sister, dressed in her pajamas. She seemed upset, somewhat frightened; however, she recognized me immediately and did not seem particularly surprised to see me.
>
> We did not talk, but we seemed to communicate (i.e., I knew she had had a nightmare, she welcomed me, etc.). After standing with her (she had arisen when I appeared) for a brief period of time, we walked back to her bedroom where I observed her body asleep on the bed—she was lying on her right side and seemingly tranquil. The sister with whom I had been communicating observed that it was probably time for me to go and I agreed. Almost simultaneously with this understanding I began to rouse and to realize I was back in the lab.

I was unable to contact the sister before Miss Z went hom for a visit a few weeks later, so this experience cannot b considered as to possible parapsychological aspects. On th visit home, Miss Z discussed the incident with her sister, an reported that the latter vaguely recalled having a drea about Miss Z visiting her at about the proper time, but unfo tunately no written records were made. As for the experienc

er se, this sort of OOB experience in which she seemed to
avel a great distance was unusual for Miss Z.

After reporting the experience described above, Miss Z
ent back to sleep, had a couple more Stage 1 dreams dur-
g the night, and was awakened by me at 6:50 A.M. so that
e could get to work.

ight IV

On reporting to the laboratory on the fourth night, Miss Z
emed to be determined to have the right kind of OOB ex-
erience. Although I had indicated complete satisfaction with
er performance so far, she was angry at herself because she
ad not been able to float up and read the target number.

Miss Z went quickly to sleep, entering Stages 3 and 4 less
an fifteen minutes after going to bed. The night was
eventful for the most part—there were several Stage 1
eam periods in the first two thirds of the night, as would be
pected for any normal subject. After four and a half hours
sleep, she had a Stage 1 dream period with REMs which
sted for half an hour. The EEG was technically rather poor
this night, being obscured with a great deal of sixty-cycle
tifact and requiring rather heavy high frequency filtering to
ake it clear, so the EEG findings should be taken with the
alization that they are subject to more error than usual.
iss Z's Stage 1 dream terminated with several minutes of in-
rmittent body movements and EEG artifact. Then (at 5:50
M.) the occipital channel showed an enlarged, slow wave
tifact, the REM channel showed no REMs, and the record
oked like a Stage 1 tracing; however, I could not be sure
ie to the considerations mentioned above. At 5:57 A.M.
e slow wave artifact was lessened and the record looked
mewhat like Stage 1 with REMs, but I could not be sure
hether this was a waking or a Stage 1 record. This lasted
ntil 6:04 A.M., at which time Miss Z awoke and called out
at the target number was 25132. This was correct (with
e digits in correct order), but I did not say anything to her
this point; I merely indicated that I had written the num-
r down on the record. I then told her she could go back to
eep, but twenty minutes later I awakened her so that she
uld get ready to go to work. At this time, she described
r experience as follows:

> I woke up; it was stifling in the room. Awake for

> about five minutes. I kept waking up and drifting off, having floating feelings over and over. I needed to go higher because the number was lying down. Between 5:50 and 6:00 A.M. that did it. . . . I wanted to go read the number in the next room, but I couldn't leave the room, open the door, or float through the door. . . . I couldn't turn off the air conditioner!

It should be mentioned that Miss Z had expected me t prop the target number up against the wall on the shelf; actually, I had laid it flat on the shelf, which she correctly pe ceived. Also, I had put a second number on a shelf in th equipment room, but she reported she could not get into thi room to see the number. Neither could she turn off the ai conditioner, and she complained that although it had been st fling, it was too cold in the room by that time.

Since Miss Z's correctly calling a five-digit numbe ($P=10^5$) was the first strong evidence that her OOB exper ences contained a parapsychological element, I inspected th laboratory carefully* the next day to see if there was an way in which this number could have been read by nor parapsychological means. As a first alternative to an explanation involving extrasensory perception, we decided tha "sophisticated" cheating by Miss Z was not impossible. Sh might have concealed mirrors and reaching rods in her pajamas and used these during the period when the EEG wa difficult to classify (due to movement artifacts) to read th number. While this is possible, I personally doubt that it occurred. The second alternative is that she might have seen th number reflected in the surface of the case of the clock whic was mounted on the wall above it. This was the only refle ting surface in the room placed in such a way that this migh have been possible. Both Dr. Hastings and I spent some tim in the dimly lit room to dark-adapt our eyes, and tried t read a number from the subject's position on the bed, as r flected on the surface of the clock. As the room was dimly and the surface of the clock was black plastic, we could n see anything of the number. However, when we shone a flas light *directly* on the number (increasing its brightness by factor somewhere between several hundred and several tho nd) we could just make out what the number was in the uch brighter reflection. Thus, although it seems unlikely, e could argue that the number constituted a "subliminal" mulus in its reflection off the clock surface. Therefore, iss Z's reading of the target number cannot be considered as oviding conclusive evidence for a parapsychological effect.*

---

* I was assisted in this by Dr. Arthur Hastings, whom I wish thank.

After calling out the number, Miss Z again returned to eep and spent approximately twenty minutes in a stage here the EEG was again quite difficult to classify. It was a nerally low voltage, flattened record which looked rather e a poorly developed Stage 1 record. However, there were o REMs to speak of, and there was only a small amount of phoid activity. Upon awaking, she reported that she had ad a number of floating sensations during this time.

Discussion

In the course of four nights in the laboratory, Miss Z re-orted three clear-cut incidents of "floating" and two in-ances of feeling completely out of her body. The floating cidents, according to her accounts, were all characterized y the feeling that she was starting to rise up above her body, ut only slightly, and then being back in her body, usually aking in the process. The "nightmare" during her second boratory night is not clearly classifiable as an OOB experi-nce.

Only the final night in the laboratory produced a report of n OOB experience giving fair evidence of parapsychological oncomitants (her reading of the target number), but as this vidence is not conclusive, the remainder of this discussion ill focus on the *subjective experience* of being out of the ody, and on the concomitant psychophysiological states.

It is difficult to state conclusively what kind of EEG pat-rn accompanied the floating experiences and full OOB ex-erience because we must depend on Miss Z's retrospective eport for the approximate times when they occurred. In connection with most of these experiences, she reported wakin up briefly several times during their course; thus, one woul expect whatever pattern accompanied them to be mixed wit transitory waking patterns, as well as with the body move ment artifacts which generally accompany waking from slee My general impression of the EEG correlates of Miss Z floating and OOB experiences is that they occurred during rather poorly developed Stage 1 pattern which was dominate by alphoid activity and often mixed with transitory periods c wakefulness. This alphoid activity was always one to one an a half cycles per second slower than her normal alph rhythm. No REMs seemed to accompany these experience and, judging from the one night when the plethysmograp was working satisfactorily and the two nights when the ski resistance channel was working satisfactorily, there are n marked autonomic alterations concomitant with the exper ences; that is, heart rate stays at a normal, steady rate, an there is no pronounced change in either BSR or spontaneou GSR activity.

---

* The setup of the room was changed slightly in preparation for fifth laboratory night, and the shelf was extended so that no eflection could be seen off the clock from the subject's position bed. However, personal difficulties forced Miss Z to return to er family's home in Southern California before a fifth laboratory ight could be scheduled.

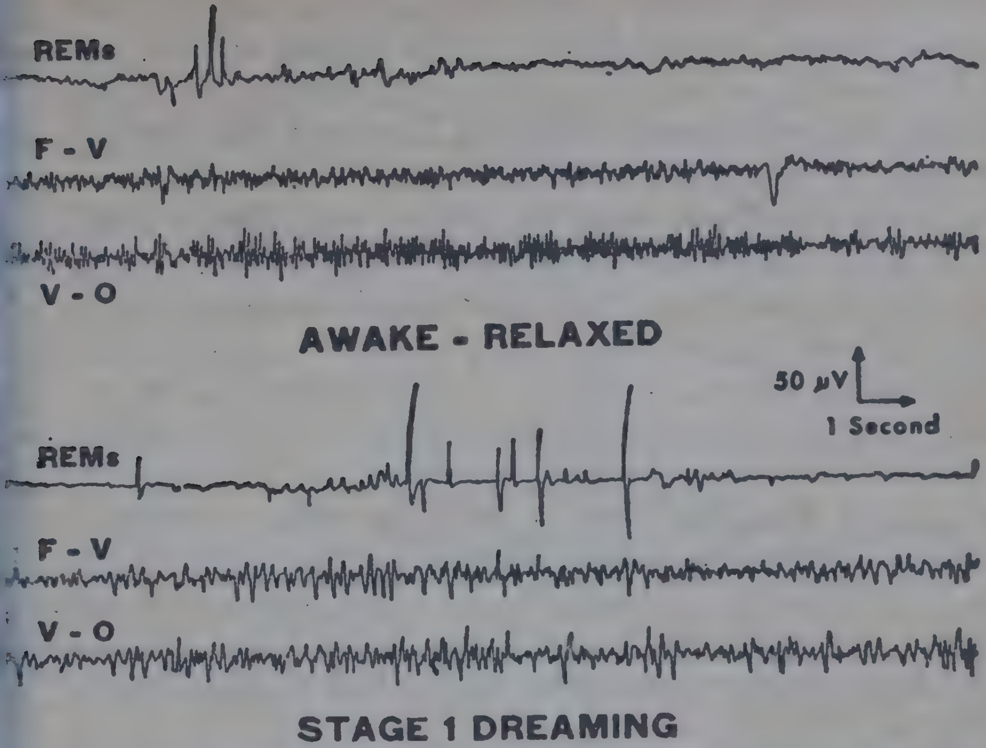
Further, it can be stated with some certainty that Miss Z OOB experiences do not occur in a normal state of Stage dreaming. She showed normal, well-developed Stage 1 EE and REM patterns, but she did not report OOB experience in conjunction with these patterns unless they changed int the alphoid pattern, without accompanying REMs.

Figure 1 shows a typical example of Miss Z's waking EE pattern and an example of Stage 1 dreaming with REM Figure 2 shows a sample of Stage 2 sleep with an example c the prominent alphoid pattern she showed in conjunctio with her OOB experiences; this particular example is take from her second laboratory night when she reported seein the time.

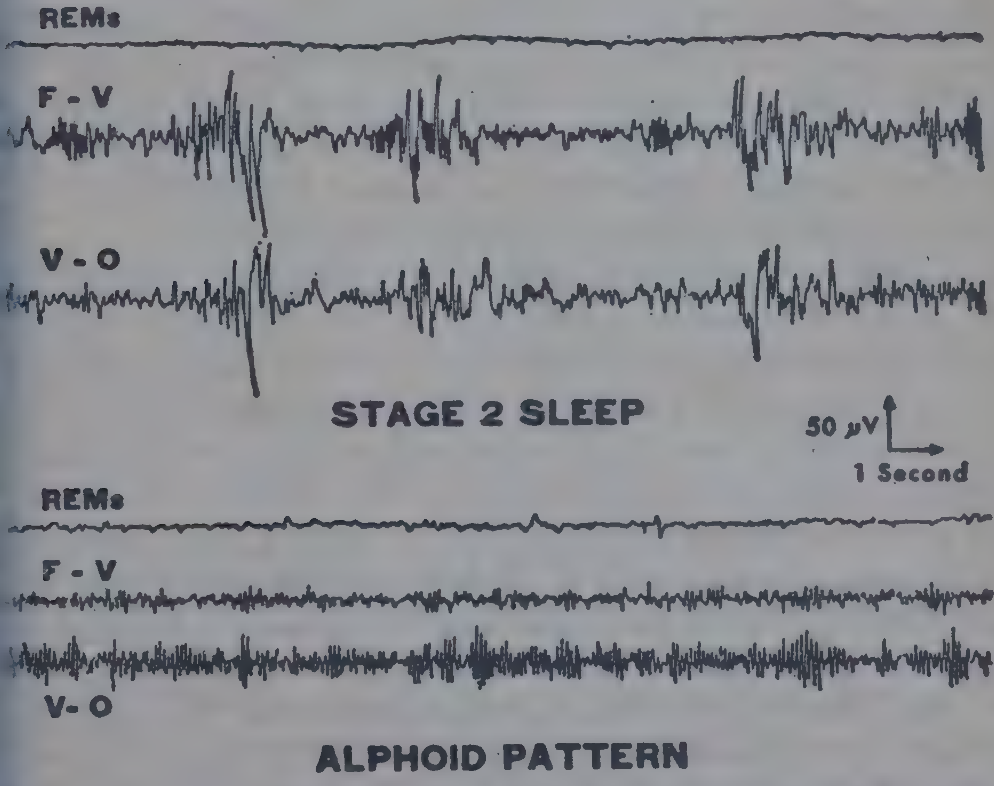
Considering, then, that we have a fairly good correlatic between Miss Z's reported OOB experiences and a relativel distinct neurophysiological pattern, how would we describ her physiological state? Here we run into considerable dif culty. The mixture of Stage 1 and pronounced alphoid acti ity, along with no REMs or cardiovascular or skin resistanc changes, has not been described before, to my knowledge, i the sleep literature.* The particular pattern cannot be u

---

* Alphoid activity is usually mentioned as a component c Stage 1 sleep, but there are no quantitative standards availab as to how much alphoid activity is typical. Thus I am dependin



ig. 1. A typical example of Miss Z's waking EEG pattern and an example tage 1 dreaming with REMs.



ig. 2. A sample of Miss Z's Stage 2 sleep and an example of the alphoid ern she showed in conjunction with her OOB experiences.

---

n personal experience with dozens of sleep records in forming impression that Miss Z's alphoid activity was exceptionally minent during her OOB experiences.

equivocally classified as a waking pattern, nor can it be u
equivocally classified as any of the known stages of slee
Nor is it a typical Stage 1 drowsy pattern by any means, b
cause of the pronounced alphoid activity. Dr. William D
ment, one of the world's leading authorities on sleep researc
kindly looked at these patterns, and agreed with me that the
could not very well be classified into any of the known sle
stages, nor could they even be classified unambiguously
waking or drowsy patterns.

From some points of view, we could say that Miss Z w
in a hypnagogic state at the time of her OOB experiences,
in a transitional state between sleeping and waking; but sir
ply putting a familiar label on the state tells us nothing abo
its nature. Furthermore, the presence of so much alphoid a
tivity is not typical of hypnagogic states. However, some i
teresting literature is starting to come out of Japane
laboratories on the slowing of the alpha rhythm during Z
meditation.[35,38,39]

The significance of alphoid activity is difficult to assess.
ordinary subjects, alpha frequency tends to decrease with a
vancing age,[34,41] but this is a long-term decline rather than
transient change. Acute alcoholic intoxication transiently lo
ers EEG alpha frequency,[31,22,54] as does acute anoxia a
hypoglycemia.[23] For normal subjects not subjected to su
drastic treatments, however, I can find no reports of su
transient alpha slowing or its possible significance.

One other unusual experimental treatment has been repo
ed to result in slowed alpha activity, viz., sensory isolatic
Heron[33] presents graphs which show a shift from alpha acti
ity predominating at 10 cps for three normal subjects to 9 c
for two of them and 8 cps for one of them at the end
ninety-six hours of isolation. Even more drastic shifts to a
phoid activity are reported by Zubek, Welch, and Saunders
for a longer isolation period. Heron also mentions that son
subjects felt as if another body were lying beside them, som
times overlapping with their physical body, although it is n
clear from his report whether these were the same subjec
who showed alpha slowing. In any case, it would be inte
esting to follow up on these findings. This is a transient alp
slowing in otherwise normal subjects, but further equating
the states of Zen meditation or sensory isolation with Miss Z
state during her OOB experiences would be quite speculati
at this time.

There is one sleep study[42] in which considerable alpho tivity was reported in the sleep records as a result of lorpromazine administration. Chlorpromazine is a fairly mmonly used tranquilizer known under the trade name of horazine. A friend indicated that Miss Z might have been king trifluoperazine (Stelazine) at the time of the study. either Miss Z herself, her roommate, nor her boyfriend re- ll that she was taking this at the time of the study, but it mains a possibility. There have been no studies of the effect this drug on the sleep EEG, but the possibility should be orne in mind that Miss Z might have been taking this medi- tion, and that it might have contributed to the alphoid tivity in her patterns. But even if this were true, it would ot account for the findings, as the fact remains that her OOB periences were associated with this unique pattern, which as quite distinguishable from the normal sleep stage pat- rns. Indeed, one might speculate that drugs which tend to ow alpha frequency might promote OOB experiences, and is could be a possibly fruitful line of experimental inquiry.

It is important to note that Miss Z's psychophysiological ate during the OOB experiences was not at all what one ould predict from reading various occult works on OOB ex- riences or "astral projections,"[21,26,44,46] or from accounts OOB experiences reported in conjunction with serious ill- esses or accidents.[10,11,12,43] These works lead one to expect at a "deathlike trance" accompanies OOB experiences, in hich respiration and heart beat would be markedly slowed, mperature might fall considerably, and in which one would obably see the sort of brain waves (high voltage slow aves) characteristic of coma.[55] Miss Z did not seem to be in "deathlike trance." When it was measured, her heart rate as normal and steady, there was no unusual autonomic tivity, and the Stage 1 and alphoid activity in the EEG as not what one associates with coma.

Closer reading of some of the techniques described in the cult literature for producing OOB experiences,[9,26,27,28,44,46] owever, suggests that there may be several distinct sorts of periences produced by the variety of techniques presented. ome of these techniques are dream-control techniques, in hich the dreamer must recognize that he is dreaming and en convert the dream into an OOB experience. Others are hat we might call hypnagogic experiences, for they involve edly holding the idea of having an OOB experience in ind while allowing oneself to drift into a hypnagogic or eep state. Still other techniques seem to involve the creation of a "trance" state, but nothing further will be said about th third possibility here because writers use the term "trance" i very ambiguous ways, as will be discussed elsewhere.[60] Mi Z's experiences may have been cases of hypnagogic phenom na following brief awakenings during the night, or of a Stage dream being converted into an OOB experience. Which altern tive is true is not clear from the exploratory work of this study

The tentativeness of the correlations reported here betwee OOB experiences and brain wave states should be noted. Th EEG is a complex phenomenon that varies in terms of fr quency, regularity, waveshape, spatial distribution over th brain, and interareal phase relationships. The analyses repor ed in this paper were confined to visual inspection: adequa investigation of the possible EEG correlates of OOB exper ences will have to use the most sophisticated recording ar electronic analysis techniques, as well as running the select subjects through control conditions to see which EEG corr lates are unique to the OOB experience and which appear u der other circumstances as well.

In summary, this brief study found a fairly clear-cut corr lation between several of Miss Z's reported OOB experienc and a physiological pattern characterized by a flattened EE with prominent alphoid activity, no REM or skin resistan activity, and normal heart rate. Much more work remains be done before we can begin to understand the psychophysi logical and parapsychological aspects of OOB experience and it is hoped that the present study, insofar as it has show that these experiences can be studied by the techniques modern science, will encourage other investigators to car out further experiments.

REFERENCES

1. Agnew, H., Webb, W., and Williams, R. "The Fi Night Effect: An EEG Study of Sleep." *Psychophys logy,* Vol. 2, 1966, 263-266.
2. Aserinsky, E., and Kleitman, N. "Regularly Occurri Periods of Eye Motility and Concomitant Phenome during Sleep." *Science*, Vol. 118, 1953, 273-274.
3. ———. "Two Types of Ocular Motility Occurring Sleep." *Journal of Applied Physiology*, Vol. 8, 1955, 10.
4. Baldridge, B., Whitman, R., and Kramer, M. "A Sim fied Method for Detecting Eye Movements duri

Dreaming." *Psychosomatic Medicine,* Vol. 25, 1963, 78-82.

Berger, R. "Tonus of Extrinsic Laryngeal Muscles during Sleep and Dreaming." *Science*, Vol. 134, 1961, 840.

Berger, R., and Oswald, I. "Eye Movement during Active and Passive Dreams." *Science*, Vol. 137, 1962, 601.

Brown, C., Giddon, D., and Dean, E. "Techniques of Plethysmography." *Psychophysiology*, Vol. 1, 1965, 253-266.

Carrington, H. *Modern Psychical Phenomena.* New York: Dodd, Mead and Co., 1919.

———. *Your Psychic Powers and How to Develop Them.* New York: Templestar Publishers, 1958.

Crookall, R. *The Study and Practice of Astral Projection.* London: Aquarian Press, 1961.

———. *More Astral Projections: Analyses of Case Histories.* London: Aquarian Press, 1964.

———. *The Techniques of Astral Projection.* London: Aquarian Press, 1964.

Davis, P., Gibbs, F., Davis, H., Jetter, W., and Trowbridge, L. "The Effects of Alcohol upon the Electroencephalogram (Brain Waves)." *Quarterly Journal for the Study of Alcohol*, Vol. 1, 1941, 626-637.

Dement, W. "Dream Recall and Eye Movements during Sleep in Schizophrenics and Normals." *Journal of Nervous and Mental Disease,* Vol. 122, 1955, 263-269.

———. "The Effect of Dream Deprivation." *Science,* Vol. 131, 1960, 1705-1707.

Dement, W., and Kleitman, N. "Cyclic Variations in EEG during Sleep and Their Relation to Eye Movements, Body Motility, and Dreaming." *Electroencephalography and Clinical Neurophysiology*, Vol. 9, 1957, 673-690.

———. "The Relation of Eye Movements during Sleep to Dream Activity: An Objective Method for the Study of Dreaming." *Journal of Experimental Psychology*, Vol. 53, 1957, 339-346.

Dement, W., Rechtschaffen, A., and Gulevich, G. "The Nature of the Narcoleptic Sleep Attack." *Neurology,* Vol. 16, 1966, 18-33.

Dement, W., and Wolpert, E. "The Relation of Eye Movements, Body Motility, and External Stimuli to Dream Content." *Journal of Experimental Psychology,* Vol. 55, 1958, 543-553.

20. Domhoff, B., and Kamiya, J. "Problems in Dream Co tent Study with Objective Indicators: II. Appearance Experimental Situation in Laboratory Dream Narr tives." *Archives of General Psychiatry*, Vol. 11, 196 525-528.

21. Durville, H. *Le Fantôme des Vivants*. 23, Rue Sai Merri, Paris: Librairie du Magnétisme, 1909.

22. Engel, G., and Rosenbaum, M. "Delirium III. EE Changes Associated with Acute Alcoholic Intoxication *Archives of Neurology and Psychiatry*, Vol. 53, 194 44-50.

23. Engel, G., Webb, J., and Ferris, E. "Quantitative EE Studies of Anoxia in Humans: Comparison with Acu Alcoholic Intoxication and Hypoglycemia." *Journal* *Clinical Investigation*, Vol. 24, 1945, 691-697.

24. Foulkes, D. "Dream Reports from Different Stages Sleep." *Journal of Abnormal and Social Psychology*, V 65, 1962, 14-25.

25. ———. *The Psychology of Sleep*. New York: Scribner 1966.

26. Fox, O. *Astral Projection: A Record of Out-of-the-Bo Experiences*. New Hyde Park, New York: Univers Books, Inc., 1962.

27. Hall, P. "Digest of Spirit Teachings Received Throu Mrs. Minnie E. Keeler." *Journal* A.S.P.R., Vol. 1 November and December, 1916, 632-660; 679-708.

28. ———. "Experiments in Astral Projection." *Jour* A.S.P.R., Vol. 12, January, 1918, 39-60.

29. Hart, H. "Hypnosis as an Aid in Experimental ESP P jection." Paper read at First International Conference Parapsychological Studies, Utrecht, 1953.

30. ———. "Traveling ESP." *Proceedings* of the First Int national Conference of Parapsychological Studies. N York: Parapsychology Foundation, Inc., 1955.

31. ———. "Six Theories about Apparitions." *Proc.* S.P. Vol. 50, 1956, 153-239.

32. Hawkins, D., Puryear, H., Wallace, C., Deal, W., a Thomas, E. "Basal Skin Resistance during Sleep a 'Dreaming.'" *Science*, Vol. 136, 1962, 321-322.

33. Heron, W. "The Pathology of Boredom." *Scient American*, Vol. 196, 1957, 52-56.

34. Hill, D., and Parr, G., eds. *Electroencephalography: Symposium on its Various Aspects*. New York: Macm lan, 1963.

Hirai, T. "An Electroencephalographic Study of Zen Meditation (Zazen): EEG Changes during Concentrated Relaxation." *Psychiatria et Neurologia Japonica,* Vol. 5, 1960, 5.

Hishikawa, Y., and Kaneko, Z. "Electroencephalographic Study on Narcolepsy." *Electroencephalography and Clinical Neurophysiology,* Vol. 18, 1965, 249-259.

Kamiya, J. "Behavioral, Subjective, and Physiological Aspects of Drowsiness and Sleep." In D. Fiske and S. Maddi, eds., *Functions of Varied Experience*. Homewood, Illinois: Dorsey Press, 1961.

Kasamatsu, A., and Hirai, T. "Science of Zazen." *Psychologia,* Vol. 6, 1963, 86-91.

Kasamatsu, A., Hirai, T., and Ando, N. "EEG Responses to Click Stimulation in Zen Meditation." (Reprint; no other details available.)

Kleitman, N. "Patterns of Dreaming." *Scientific American,* Vol. 203, 1960, 81-88.

———. *Sleep and Wakefulness*. Chicago: University of Chicago Press, 1963. (2nd ed.)

Lester, B., and Guerrero-Figueroa, R. "Effects of Some Drugs on Electroencephalographic Fast Activity and Dream Time." *Psychophysiology*, Vol. 2, 1966, 224-236.

Muldoon, S., and Carrington, H. *The Phenomena of Astral Projection*. London: Rider and Co., 1953.

———. *The Projection of the Astral Body*. London: Rider and Co., 1956.

O'Connell, D., and Tursky, B. "Silver-silver Chloride Sponge Electrodes for Skin Potential Recording." *American Journal of Psychology*, Vol. 73, 1960, 302-304.

Ophiel (pseudonym). *The Art and Practice of Astral Projection*. San Francisco: Peach Publishing Co., 1961.

Oswald, I. *Sleeping and Waking: Physiology and Psychology*. New York: Elsevier, 1962.

———. "Physiology of Sleep Accompanying Dreaming." In *Scientific Basis of Medicine: Annual Review*, 1964.

Pierce, C., Mathis, J., and Jabbour, J. "Dream Patterns in Narcoleptic and Hydrancephalic Patients." *American Journal of Psychiatry*, Vol. 122, 1965, 402-404.

Rechtschaffen, A., and Verdone, P. "Amount of Dreaming: Effect of Incentive, Adaptation to Laboratory, and Individual Differences." *Perceptual and Motor Skills*, Vol. 19, 1964, 947-958.

Rechtschaffen, A., Verdone, P., and Wheaton, J. "Reports of Mental Activity during Sleep." *Canadian Journal* *Psychiatry*, Vol. 8, 1963, 409-414.

52. Rechtschaffen, A., Wolpert, E., Dement, W., Mitchell, and Fisher, C. "Nocturnal Sleep of Narcoleptics." *El troencephalography and Clinical Neurophysiology*, V 15, 1963, 599-609.
53. Roffwarg, H., Dement, W., Muzio, J., and Fisher, "Dream Imagery: Relationship to Rapid Eye Moveme of Sleep." *Archives of General Psychiatry*, Vol. 7, 19 235-258.
54. Romano, J., and Engel, G. "Delirium: Electroencepha graphic Data." *Archives of Neurology and Psychiat* Vol. 51, 1944, 356-377.
55. Silverman, D. "Retrospective Study of the EEG Coma." *Electroencephalography and Clinical Neu physiology*, Vol. 15, 1963, 486-503.
56. Snyder, F. "The New Biology of Dreaming." *Archi of General Psychiatry*, Vol. 8, 1963, 381-391.
57. ———. "Progress in the New Biology of Dreamin *American Journal of Psychiatry*, Vol. 122, 1965, 3 391.
58. Tart, C. "Technical Note: Use of Strain Gauges Measure Rapid Eye Movements." Paper, Association the Psychophysiological Study of Sleep, New York, 19
59. ———. "The Influence of the Experimental Situation Hypnosis and Dream Research: A Case Report." *Am ican Journal of Clinical Hypnosis*, Vol. 7, 1964, 163-1
60. ———. "The Concept of Trance." Manuscript preparation.
61. Whitman, R., Pierce, C., Maas, J., and Baldridge, "The Dreams of the Experimental Subject." *Journal* *Nervous and Mental Disease*, Vol. 134, 1962, 431-439.
62. Williams, H., Tepas, D., and Morlock, H. "Evoked sponses to Clicks and Electroencephalographic Stages Sleep in Man." *Science*, Vol. 138, 1962, 685-686.
63. Wood, P. "Dreaming and Social Isolation." Unpublish doctoral dissertation, University of North Carolina, 19
64. Yram (pseudonym). *Practical Astral Projection*. N York: Samuel Weiser, 1965.
65. Zubek, J., Welch, G., and Saunders, M. "Electro cephalographic Changes during and after 14 Days of P ceptual Deprivation." *Science*, Vol. 139, 1963, 490-4

2054

SI AND ANIMAL BEHAVIOR: A SURVEY

Robert Lyle Morris

Do animals have extrasensory perception? Is there ESP be-
een animals, between animals and man, do animals show
epathy, clairvoyance, or precognition? Because of the close
otional ties that people have with their pets, many reports
ESP-like rapport are made; dogs and cats are often
dited with "understanding" their human friends, or of
owing ESP qualities in other ways. Research with animals
been difficult; it has attracted a fairly large number of
n and women, because some of the human variables can
excluded from animal research and it may therefore be
arded as "purer" or more easy to control than human
P. Unfortunately, animal research at the Institute for
rapsychology at the Foundation for Research on the
ture of Man suffered a severe setback in 1973, when one
earcher was found to have engaged in fraudulent practices.
is made animal research after 1970 suspect, and Dr.
orris's paper is limited to work up to that point. A sum-
ry on the difficulties encountered can be found in "Second
port on a Case of Experimenter Fraud," by J. B. Rhine,
urnal of Parapsychology *(Vol. 39, No. 4, December, 1975).*
. Morris's paper appeared in the Journal of the American
ciety for Psychical Research *(Vol. 64, No. 3, July, 1970).*
pyright © 1970 by the American Society for Psychical Re-
rch, Inc.

Introduction

The study of animal behavior has been undertaken in the
t by two fairly discrete groups of scientists: (a) etholo-

gists, who mainly studied the behavior of animals und
natural conditions and focused upon the relatively inflexib
"innate" components of behavior, and (b) comparative ps
chologists, who were more interested in flexible behavior pa
terns such as those the animal "learns" as it performs a ta
for reward under controlled laboratory conditions. The resu
tant dichotomy between "innate" behavior and "learned" b
havior is generally considered today to be more appare
than real. Behavior is now seen to be the outcome of e
tremely complex interactions between genes and environme
A good introduction to these topics is provided by Klopf
and Hailman.[10] The serious student will find more compr
hensive coverage in two recent books, one by Marler a
Hamilton[15] and the other by Hinde.[8] The former shou
probably be read first.

The possibility of psi abilities in animals (anpsi) is rare
considered in the animal behavior literature. A passage fro
a recent book by N. Tinbergen, one of the leading pr
ponents of the ethological school, probably reflects the at
tude of most present-day animal behavior researchers:

> . . . If one applies the term [ESP] to perception by processes not yet known to us, then extrasensory perception among living creatures may well occur widely. In fact, the echo-location of bats, the functions of the lateral line in fishes and the way electric fishes find their prey are all based on processes which we did not know about—and which were thus "extrasensory" in this sense—only twenty-five years ago.[37]

Taken literally, of course, such a statement is quite acce
able to parapsychologists and animal behavior research
alike. However, does such a statement simply indicate t
animal behavior researchers are interested in recognized b
poorly understood phenomena such as bird migration and
responses of certain animals to magnetic fields, e.g., Brown
al.?[8] Or does it indicate that they are genuinely open to
possibility of investigating those cases of reported animal
havior which more clearly resemble the phenomena
parapsychology? So far, the former would seem to be mu
more likely than the latter. Only two researchers with
backgrounds in animal behavior have developed sufficient
terest in psi to make firm contributions to parapsycholo

J. G. Pratt, who took his degree under D. K. Adams in nparative psychology at Duke and who is certainly no nger to readers of this *Journal;* and Dr. Remi Chauvin, o is a leading French ethologist and frequent contributor parapsychological journals.

One reason why so little interest in anpsi has been shown comparative psychologists and ethologists may be that no ncise survey of the present evidence bearing on this ques- n is available. The following section will attempt to rectify s situation.

Survey of the Evidence for Psi in Animals

In this paper, evidence for psi in animals is taken to mean dence for the presence of some means of general informa- n acquisition above and beyond those mechanisms already own or specifically postulated to be present. This definition quite general, but should suffice for the discussion of earch that will follow. More specific characteristics may or y not be available from the data at this time.

oming and Psi-trailing

One of the most puzzling phenomena of animal behavior is ability of certain animals to "home"; that is, to return to place or origin after having been removed from it and re- sed at some distance. Pigeons, for example, have been used carry messages from one loft to another since early Greek d Roman times, and they have been raced for sport for r a hundred years. The distance involved must be great ough to eliminate the possibility that the animal is using ognition of familiar landmarks in accomplishing its task. so, the means of removal must be such as to eliminate the ssibility that the animal is picking up environmental cues ng the way.

Recently the problem of how homing is accomplished has oduced extensive research, especially with pigeons and cer- n migratory birds. Matthews[16] provides the best recent sum- ry of these studies.

Since some species are able to home from any direction, it generally considered that homing involves two components: selecting the correct initial direction, and (b) maintain-

ing that direction long enough to bring the animal within t
range of familiar landmarks. There is now extensive eviden
that celestial cues, such as the positions of the sun, moo
and certain star configurations, are involved in directi
maintenance. However, no adequate theory has yet been d
veloped to explain how the proper direction is initial
chosen. This is true not only for birds, but for many oth
animals that appear to home. Such widespread occurrence
an unexplained ability led Sumner[36] in 1939 to suggest th
psi may be involved in the homing process. Later, Rhine
and Pratt[22] speculated along similar lines and initiated i
teraction with some of the leading researchers in the field.
research program was begun in cooperation with the Office
Naval Research. Pratt[23] has provided a summary of t
research that followed, in which he and a number of c
workers, including the Cambridge parapsychologist R.
Thouless, attempted to find an experimental design with
geons that would provide a clear-cut test of the "psi hypoth
sis." Several attempts were made to use a mobile loft in the
studies. However, this was rendered difficult by the pigeo
themselves, who were reluctant to respond to it as a norm
loft. Pratt finally decided that the best design would make u
of lofts located at sea on ships. The pigeons would be fam
iarized with the loft location and taught to home to it. Th
they would be presented with a test situation in which the lo
was at a new location. In such a situation, if the pigeons
to the loft in its new location, psi is involved; if they do n
then subtle learned cues are responsible. This study would
quire extensive funds and time, and it has not as yet be
carried out for these reasons. Consequently, there is
present no experimental evidence bearing directly on t
question of the involvement of psi in animal homing ability.

A somewhat related phenomenon is "psi-trailing." The fo
lowing is a generalized example. A family moves to a dista
location, leaving behind a favorite pet. Some time after t
family has left the pet becomes very upset and soon disa
pears. A few days or even weeks later, an animal very close
resembling the pet arrives at the new home of the family a
shows definite signs of recognizing them as its old owners.
in such cases, the pet really has negotiated the distance to t
new home of its former owners, it has not done so throu
the use of learned information acquired in the usual wa
since it has never traveled the route before, nor has it ev
been located at the destination before.

Rhine and Feather[31] have presented the only serious at-
mpt to assess the validity of the psi-trailing phenomenon.
r their analysis they drew upon the Duke Parapsychology
boratory's collection of cases involving possible ESP in ani-
als sent in by people all over the world. Four criteria for
praisal of psi-trailing cases are suggested: (a) a reliable
rce of information about all the salient aspects of the
se; (b) a sufficiently specific characteristic by which the an-
al is recognized, e.g., a name-tag, license number, or un-
ual scar; (c) an assessment of the general circumstances of
e case—whether they make sense, are internally consistent,
.; and (d) adequate supporting data, such as independent
rroborative testimony from others involved, availability of
e pet (with identifying characteristics) for inspection, and
on.

Fifty-four cases were judged by the authors to meet the
ove criteria adequately. Included were cases involving
enty-eight dogs, twenty-two cats, and four birds. Long-
nge trailing cases (over thirty miles) involved ten dogs,
elve cats, and three birds. These cases provide the best evi-
nce for psi-trailing as a phenomenon. As the authors point
t, however, they do not conclusively demonstrate psi-
iling. One does not know how many pets were left behind
at tried to find their owners and failed; one does not even
ow how to evaluate the likelihood of psi-trailing occurring
"chance," i.e., without information of any sort, psi or oth-
wise, being utilized, other than that it would decrease with
stance. Also. some have argued that a heightened sensory
pacity could have been used, such as smell. If this is to be
iously considered for cases involving several weeks of
psed time and over a hundred miles in distance covering
ll-traveled major highways, then we are dealing with a phe-
menon of sensory acuity just as unknown as any other pos-
ilities encompassed by the psi rubric. Sensory physiologists
ould in this case become quite interested in "psi-trailing."

At any rate, as in the case of homing, an adequate experi-
ntal test of the psi hypothesis has not yet been done. Rhine
d Feather propose two studies: (a) Test the ability of a pi-
on to locate its mate over gradually increasing distances.
eons maintain bonds to their mates and seek them when
arated. The suggestion here is that psi is not modality-spe-
c, and that a bird good at locating its own loft (a homing
uation) should also be good at locating a separated mate
psi-trailing situation). (b) Study the initial orientation of

the animal as it sets out after its owner, using an apparatu that would allow the collection of a fair amount of dat These suggestions are good, but until they or others hav been carried out, no conclusions can be reached about eithe homing or psi-trailing.

Hive Behavior

Several early naturalists and students of animal behavi were impressed by the unusual precision in the activities social insects, especially those living in hives. Eugene Marai a South African naturalist, in the early 1900's wrote abo the coordination in the behavior of the workers in termi colonies.[14] He postulated a network of higher-level commun cation that facilitated the social activities of such simple cre tures. Maeterlinck[13] took up Marais's ideas and repeated the in later work. He felt that the simultaneous performance complex behavior patterns by so many simple insects cou not be adequately explained in terms of inherited traits learned behavior patterns. His term for the communicati mechanism was "spirit of the hive," although he admitt that this term had no explanatory value and merely served show that he did not understand how the communication w effected.

Edmond Selous (quoted in Hardy[7]), an early ornithol gist, postulated that some sort of thought-transference was i volved in the coordination of the sudden turns of large floc of birds. Theodore Reik,[26] a psychoanalyst, presented a d cussion of psi communication not only in social insect hiv but also in groups of caterpillars. Reik mentioned the zool gist Degener's assumption of a "hyperindividual group sou in animal societies. He also called attention to Freud's noti that the original presence of a "group will" in hive societ has been replaced in social evolution by the superior meth of communication through external sign-stimuli.

These theories were formulated during the early stages the science of animal behavior. Recent developments in understanding of the roles of high-frequency sounds and ternal chemical information transmitters (e.g., pheromone as well as advances in our understanding of the evolution social behavior, have made such theories less necessary to comprehension of hive behavior. Additionally, there is as no experimental evidence that would strongly suggest presence of psi in such behavior. Consequently, we cann y that hive behavior itself provides strong evidence of psi.

hinking Animals

Occasionally one hears of an animal that can talk, add and btract, and read the future. Upon investigation, such an an- al generally turns out to be a horse or a dog that has been ight to respond to verbal questions by barking, tapping, or wing an appropriate number of times, or by selecting an propriate lettered block from a tray. It soon becomes evi- nt that for the animal to succeed someone in the room ust know the answer and that this person is providing a btle cue which tells the animal when to stop responding or hen its paw is above the appropriate block. Several exten- ve reports of such cases exist,[1,9,12,32] the most famous of hich is Clever Hans.[21]

Three hypotheses have been put forward to explain lever" animals: (a) genuine intelligence, (b) psi ability, d (c) subtle cues from the environment. The first hypothe- has been ruled out by the consistent failure of such ani- als to succeed when no one present knows the correct swer, together with the findings of comparative psycholo- sts regarding the limitations of animal intelligence. The sec- d hypothesis is the one which is under consideration in this per. The third hypothesis has been demonstrated to be ap- icable to most cases. There are certain cases (e.g., Macken- e[12]) in which the animal succeeded when the person who ew the answer was supposedly not visible to it. In none of ese instances, however, does the description of the situation em sufficiently detailed to allow the reader to draw firm nclusions. A possible exception is one of the five cases of ever dogs investigated by White,[38] but even here one would e more information. Both Rhine[28] and White have con- uded, as a result of their own experiences, that work with ected outstanding animal subjects trained to respond to estions posed by the trainer or owner is extremely difficult. ere one is generally working with a complex trainer-animal ationship that has been gradually built up and is easily dis- pted by external influences. Moreover, environmental cues pear to be involved in these cases at some part of the train- g process, and animals such as dogs and horses are quite ed to responding to subtle cues from their owners during eir daily interactions.

Only once has an adequate experimental procedure been imposed upon a clever animal, but since this case (that of the dog Chris) closely resembles other experimental studies involving forced-choice responses, it will be considered below in the section dealing with experimental studies. The presen section must be concluded with the statement that no definit evidence for anpsi can be found in the published accounts o investigations of clever animals.

Additional Nonexperimental Evidence

Rhine and Feather,[31] in their discussion of the nonexperimental cases collected at their laboratory, have describe three categories of behavior suggestive of psi in addition t homing and psi-trailing: (a) behavior which suggests a reaction to impending danger to the animal itself or to its owne (b) behavior which suggests a reaction to the death of th distant owner; and (c) behavior which suggests anticipatio of a positive event such as the return home of the owner after a long absence.

Some of these cases are quite striking. In one instance, dog was left at a veterinarian's while the owners went t Florida. One morning the dog started howling at 10 A.M. an continued for a full hour. This behavior prompted the veterinarian to mention this unusual event to the family upon the return. They were astonished, since on that morning they ha been marooned in a flash flood from 10 A.M. to 11 A.M. Suc coincidences, although striking, are admittedly difficult to de with in other than a descriptive manner. The safest policy appears to be to continue collecting information from real-li situations and to examine them closely for suggestions whic may lead to adequately controlled experimental designs. Accordingly, the rest of this section will be devoted to the experimental literature.

Experimental Evidence Based on Choice Behavior

The investigations to be discussed in this section can properly be called parapsychological research. Each stu was designed specifically to test for psi ability in the anima used. The researchers were all people who considered themselves at least part-time parapsychologists.

The first work to be considered is that of Osis and Foster ey did a series of experiments with cats involving a simple o-choice maze apparatus. The cats were run one at a time, d were required to select which of two cups at the end of a way contained food. Several series under different condi- ns were carried out, all under a two-experimenter plan in ich the handler and scorer did not know where the food s. In preliminary runs, it was found that some cats did bet- than others and that positive conditions (e.g., handling the ts affectionately) produced better results than negative con- ions in which distractions were present, such as rubbing the ts' fur the wrong way, darkening the room, and so on. nsequently, some of the series were predicted high-aim xpected successful scoring) and others were predicted low- m (expected significant avoidance of the correct target, or i-missing). The high-aim series, taken together, produced gnificant positive results ($P < .01$). The low-aim series were ore variable, with negative results in all but one and no erall significance. When trials showing a strong bias to one de (four or more consecutive responses to one side) were minated, the overall results improved. The experimental sign appears adequate to have eliminated visual cues (the od was out of sight of the cats until their response was ade) and unconscious cues from the experimenter. Olfac- ry cues were minimized by having a fan above the appara- s blowing air toward the food cups. The authors felt that e increased success when biased trials were removed was ditional evidence that no olfactory cues were present, since ch cues should operate equally on biased and unbiased tri- s. However, it is possible that certain trials may have pro- ded barely above-threshold olfactory cues, and that these es were sufficient to compel the cat's attention and break y existing side bias. For this reason, and also because the sults were not as good when analyzed directly, series by ries, these data cannot be considered as strong evidence for i in animals. Two main points are raised by this work, how- er: (a) the need to consider side habits when dealing with rced-choice material, a point also noted by Rhine,[28] and) the possibility that consistent target avoidance, or psi- ssing—a phenomenon present in human ESP responses .g., Rhine[29])—may also occur in animals. (For evidence of i-missing to be legitimate, of course, it must be predicted in dvance.)

The next forced-choice experiment to be discussed was ne by Wood and Cadoret,[39] using Chris, a "clever" dog owned by Wood, as the subject. Chris had a history similar t the other clever animals mentioned above. Prelimina studies by another investigator[6] showed that Chris was r sponding to experimenter cues. Later on, at Cadoret's sugge tion, Chris was taught by his owner to do a standard ES card-guessing task by converting the number of times the do pawed to a standard symbol call (e.g., one paw for circl two paws for square, etc.). Soon a procedure was develope whereby Chris responded to ESP cards that were enclosed i opaque envelopes and unknown to the experimenter, havi been prepared by a second party the night before. Und these conditions, Chris responded well above chance (P .0001) during a pre-set series of 500 trials, in blocks of ten twenty trials per day. When Cadoret was called in to witne this high level of performance, Chris produced a significa negative deviation under a variety of conditions. The autho were unable to account for this, other than to suggest that th dog may have shown psi-missing as a result of the stress Cadoret's visit and the pressure to do well for him. Pratt also did some work with Chris, and has recently suggested that Chris may have been responding to unconscious expe menter cues all along, with the experimenter functioning the psi subject. Because of this possibility, and because of th inconsistency in Chris' results, one is reluctant to consid this experiment as strong evidence for psi in animals. It do represent, however, the best attempt so far to deal wi "clever" animals experimentally, and the strength of th results under reasonably tight conditions suggests that son psi was involved, either by animal or man.

Another forced-choice experiment is one carried out Bestall in South Africa.[2] His studies dealt with precogniti in laboratory mice. The mice, all males, were run in a tw choice maze situation. If they made the correct choice, as d termined by a random process that occurred after the choi was made, they were rewarded six hours later by access to female. Incorrect choices were punished by death. Bestall o tained significant results by this procedure, and also some e dence for cyclic variation in hitting. Later experiments Bestall, however, did not produce clear-cut results. It is dif cult to conclude much from Bestall's work other than that t precognition procedure appears sound, so long as the actu determination of the target is not under the influence of t experimenter. The cyclicity of scoring is of interest only roportion to its consistency, which is difficult to assess from e information available.

A recent project of much interest also involved precogni- on in mice. The authors are a well-known French biologist nd a colleague who for the present wish to remain anony- ous, but who have published an account of their work un- er pseudonyms.[4] These investigators employed a ock-avoidance task. Periodically an electric current was ssed through the floor of one half of the animal's cage. A w seconds before each occasion, a light signaled the mouse at a trial was beginning. By precognizing which half would ceive current, the mouse could escape to the other side and void the shock. A low barrier separated the two sides. Both e side the mouse was on at any given time and the side to hich current was administered were recorded automatically. the main study so far reported, four mice were run for enty-five sessions each, with one hundred trials comprising session. The overall results of this experiment were not sta- tically significant. However, when only those trials were nsidered in which the mice crossed from one side to the her following non-shock, the results became statistically sig- ficant. These trials were selected by the authors for special alysis because they appeared to be the only ones in which e animal's crossing behavior was not either rigidly stim- us-bound or highly stereotyped. Such trials, the authors rea- ned, would be more likely to show psi than the rigid or ereotyped trials because they would not be so likely to have en determined by external, sensory stimulation. This ap- ars to be legitimate reasoning and procedure. However, it aces a specific burden on the randomizing device used to termine the side to be shocked, in this case a device using dioactive decay as its noise source. A hit can only be ored when the side to be energized is not the side energized the previous trial. Likewise, a miss can only be scored hen the side to be energized is the same as the side ener- zed on the previous trial. Consequently, any tendency for e randomizing device to generate more alternating target se- ences than nonalternating target sequences would provide re opportunities for hits than misses. An analysis of the get order which I myself carried out revealed no such ndency on the part of the randomizing device.

Another possibility is that the randomizing device may ve favored one side over the other, thereby providing the use with a probability learning task which would artificially increase the proportion of hits. No such overall bias was ev dent, nor did the analysis of the target order show a dail bias in excess of expected random deviation.

This study stands as the best available evidence for psi i animals primarily because it was a tightly designed, automat cally recorded experiment yielding significant results. How ever, because the significance was not obtained on the overa results, but rather on a secondary (although logical) analysi one is reluctant to draw firm conclusions until replications ar in print. The investigators are continuing their research an have presented confirmatory findings in a recent conventio report.[5] An independent attempt at replication by America investigators has yielded encouraging results, but is not co sidered a confirmation at this time by these researchers.[11]

An early study involving attempts by trained dogs to locat underwater mines with the aid of ESP has now been declass fied by the U.S. government. The method and results were re cently presented by Rhine,[30] who was one of the investigator Since this study has not yet been published, complete evalu ation will not be undertaken here, other than to note that sen sory cues and psi on the part of the trainer may not hav been adequately eliminated.

Finally, we come to a series of studies in which a huma (hereafter referred to as the agent) attempted to influenc solely by his own thoughts the actions of an animal in forced-choice situation. Richmond[33] attempted to influenc the direction of locomotion of paramecia viewed by him un der a microscope. This study produced interesting results, bu was not done with a blind observer and recorder. Morris an Warren[18] tried to influence rats and fish to go left or right i a simple T-maze. Both studies involved blind handlers an recorders for the animals and produced marginally significan results. However, in both cases the agent was visible to th handler and could conceivably have provided unconsciou cues either to the animal or the handler. Stump and Morris[3 attempted to influence two kittens in a T-maze and obtaine a consistent and significant difference between the two kitten in their performance, one scoring positively and the othe negatively. Once again, the agent was physically present an could have provided cues. Osis[19] also attempted to influenc kittens in a two-choice situation. In the main series reporte the agent was screened from the animal and the handler, an the handler was blind. As in the work described above by Osis and Foster,[20] there were predicted high runs an redicted low runs, depending on whether or not running onditions were favorable and free of disturbances. The edicted low runs produced marginally significant negative sults and the predicted high runs produced positive but onsignificant results. An analysis of scoring changes over me per cat revealed a significant decline in scoring from the rst hundred trials done by each cat to the second hundred. his decline had also been found in earlier series, and was onsidered by the authors as good evidence that no learning ased on external cues was taking place. This study is the est designed of those examining the possibility of man-ani- al psi communication. Its main drawback is that the results ere not obtained on an overall psi-hitting basis, but are resent only on internal analyses or analyses of psi-missing. onclusions are difficult to reach until similar results are ob- ined in a replication of the design and procedure.

xperimental Evidence Based on Emotional Behavior

A few anpsi studies of a preliminary nature have been esigned to examine somatic, or emotional responses rather an fixed-choice responses.

Morris[17] did two experiments in which the locomotor activ- y of an animal was monitored over a period of time and en used as an indicator of whether or not the animal antici- ated through psi what was about to happen to it. In the first udy, nineteen rats were inserted one at a time into an open ld maze and a count taken of the number of floor squares aversed by each rat during a two-minute time interval. Fol- wing this, a second experimenter either killed the rat or ared it, according to whether an odd or an even digit had en assigned to the rat by a random number table in the ssession of this second experimenter. Thus the procedure as double-blind. The expectation was that rats about to die uld show less activity than those that would live. Results ere positive but not significant. Three of the rats had been n in the maze several times previously and were all ex- emely active. When their scores were removed, the scores the remaining sixteen rats showed a marginally significant ference in the expected direction between those to die and ose to live.

The second Morris study,[17] done with the aid of Miss Ken- Matthew, involved using the relative locomotor activity three goldfish as an indicator of stress anticipation. For each trial, the activity of all three was rated by an observe for two consecutive thirty-second intervals. Following thi the observer threw two dice to determine which goldfish wa to be held aloft in a net. The expectation in this case was tha the most active animal would be the one to be picked u Analysis of the results showed that the most active goldfis was to a significant extent more likely to be picked up tha the least active. These results were stronger when there was long interval between trials than when there was a short interval. This finding confirmed expectations, since the fis would be more likely to habituate and dampen their responses if the intervals between trials were short. The first of thes two studies would have provided strong evidence for psi the results had been obtained on all the animals run and the number of animals run had been larger. The second stud used only one experimenter and the results could have bee due to her own psi as she threw the dice. Conclusions therefore cannot be drawn until further studies have been carrie out, with refinements of design in the latter case. It is inte esting to note that the activity level shown by the rats antic pating stress was low, whereas for the goldfish it was hig This difference was anticipated by the experimenters, as conforms to the natural responses of these two species in th presence of stress. Rats freeze when threatened, whereas gol fish try to escape when the net enters the water.

Reitler[27] conducted exploratory experiments in which h noted that a colony of sea worms, *Tubifex*, gave regular r sponses to the presence of a human observer apparently without the mediation of known sensory cues. However, th possibility of sensory cues from unanticipated sources ma not have been adequately excluded, and conclusions are dif cult to draw for this reason.

At a recent conference in Russia, mention was made some experiments conducted on mother rabbits and the young.[34] Reportedly, the mother showed psychophysiologic responses when her young were harmed while at some di tance from her. Until this report is published in accessib form, one cannot assess its value.

Summary of the Evidence

None of the studies presented above can stand alone conclusive evidence for psi in animals. In each case, eith the design was lacking or the results obtained were not suf ently clear-cut. Studies which rely on internal or indirect efcts for their significance fall in the latter category. When nsidered collectively, the body of evidence is fairly imessive, yet there is a certain inconsistency and ambiguity esent which dulls the overall effect.

Much of the uncertainty could be removed if more search were done. Several studies deserve to be repeated, ost notably those of the French workers, and those of Osis, stall, and Morris. (The Wood and Cadoret study with aris is omitted from this list because it centered on a spefic individual animal trained in a certain way, which makes petition practically impossible.) Such attempts at repetition, ot only by the original workers themselves but also by oth-s, are essential throughout the field of parapsychology. Any nanticipated results obtained by indirect or internal measures nnot stand on their own unless repeated, since the question f improper selection of analysis will inevitably arise in any iscussion of the results.

It has often been pointed out that parapsychology as a hole has been plagued by nonrepeatability. Several factors ay be involved, but two stand out. First, workers in the eld seem reluctant to repeat their own and each other's exeriments. Either no attempt at all is made, or else the atmpted repetition differs in some crucial way with respect to bjects, experimental procedure, nature of the testing situaon, and so on. This reluctance may be accounted for in part y the increased amounts of time and money that are necesary for adequate work. Second, many researchers report that crucial factor in obtaining evidence of psi is the relationnip between subject and experimenter. Such relationships n easily change from one session to another, or within a ssion. Rao[25] reviewed several studies showing that different kperimenters under the same conditions can produce ramatically different results.

If subject and experimenter variables are in fact responsie for the lack of repeatability in parapsychology, then perps work with animals may acquire additional significance r parapsychologists. Subject and environmental variables ould be more easily controlled, whereas experimenter variaes could conceivably be eliminated through use of standarded automated apparatus. Consequently, experimental work ne with animals may be easier to replicate than work with umans. Of course, if animal work results in just as much nrepeatability as human work, then the experimenter can no longer fall back on his conventional excuses and will b forced to look elsewhere.

My plea for an increase in research into the problem c anpsi is thus aimed not only at established animal behavic investigators, but also at parapsychologists. The research cite above should provide evidence to animal behavior researcher that there may be an entirely new aspect to animal behavic and that this possibility deserves careful attention. The ac vantages of anpsi research should provide stimulation fc parapsychologists to overcome their objections to suc research in terms of expense, time, and equipment because c the potential rewards it offers in consistent results. The fac that no conclusions have thus far been reached should not b a deterrent to either the animal behavior researcher or th parapsychologist, for it is in those areas in which conclusior have not been reached that the best opportunities arise for ex citing and innovative research.

Some Considerations of Method

The final section of this paper will deal with methodolog cal problems likely to be faced by anpsi researchers. The fo lowing suggestions are merely to be taken as guidelines an are by no means to be construed as fixed rules.

Forced-Choice Experimentation

Choice of Species: The species chosen for anpsi researc should be (a) a species mentioned often in spontaneou cases, since such animals have already given indications c psi ability; (b) a species that is easy to motivate and that ca readily be induced to seek rewards or avoid punishmen since such responses may serve as good objective indicato of the functioning of the psi process in a variety of situations (c) a species for which psi would seem to be especially adap tive in nature, such as one constantly involved in violer predator-prey relationships; (d) a species that fits the pract cal requirements of tightly controlled laboratory researc such as reasonably small size, ease of handling, freedom fro disease, and so on; and (e) a species about whose behavic the physiology a fair amount is already known.

Choice of Motivator: In a forced-choice experiment th mal is induced to choose among alternatives, each one of ich is equally likely to lead to a reward; i.e., something ght after by the animal because it is motivated to do so. oidance of unpleasant stimulation can function as a re- rd in this context. Some of the studies described above d response-outcome contingencies that were already fixed the time the animal made the choice (GESP or clairvoy- e paradigm). Others used response-outcome contingencies t were fixed only after the animal had finished making its ice (precognition paradigm). The feature common to h situations is that the information linking the reward to a cific response is not available to the animal through own channels of information transmission.

Some general considerations regarding the kind of motiva- n to be used in these situations are as follows: (a) They uld be motivators that occur often in spontaneous psi es involving the species; (b) they should have been shown previous research to function as motivators for the species olved, and (c) they should be administrable in a fairly y, clear-cut, unambiguous way without providing sensory s. Since almost all animals have deceptively good abilities h at least one sense, often that of smell, many researchers fer to use the precognition paradigm so as to eliminate all ssibility of sensory cues.

Choice of Experimental Situation: For forced-choice dies, the following requirements should be met: (a) The mal should be able to acquire its reward by making a rly simple, easy to recognize, and easy to score response.) The animal should have available to it some number of ilar alternative responses, only one of which will lead to reward on a given trial. (c) The situation should be one ich is natural to the animal, so that the surroundings and responses to be made are not new to it and therefore do require a great deal of time-consuming learning before ble trials can begin. The animal should be allowed to iliarize itself thoroughly with all aspects of the situation ore it starts the ESP trials, unless the stress of being in a situation is itself part of the experiment. (d) The situa- should have a response-reward contingency built into it hat the animal is aware (through previous learning) that of the alternative responses it can make will lead to the ard on any given trial. (e) The initial ESP trials should airly well balanced among alternatives, as animals some- es show perseveration at the site of initial success. Once the animal seems free of perseveration, a more complet random order of correct alternation can be used.

Some General Procedural Considerations: Prelimin studies with a given animal can be loosely carried out to ta advantage of the spontaneity of occasions in which full perimental precautions are not practical or would be psyc logically inappropriate. Studies from which scient conclusions will be drawn must have adequate controls. observers and scorers should be completely unaware of precise target situation in order to prevent unconscious bi ing of the results. The target order (order of choices leadi to the reward) should be properly randomized. This mea that each choice should have an equal likelihood of being sociated with the reward on any given occasion. Standa random number generating devices and tables of rando numbers are available for this purpose. If one's own device used rather than a table that has already been tested for ra domness, then the device should be periodically checked randomness. This will insure that the animal is receiving information that it could use in making its choices. Also, a selection of trials for special analysis should be made with specific logic in mind (as in the case of the French investi tors) and done in such a way as to avoid the possibility of troducing an artifact into the results. (These rules inserted only for the sake of completeness since most read are undoubtedly already well aware of them.)

Emotional or Somatic Response Experimentation

Much of what was stated above for forced-choice wo also holds true for emotional response work. Consequent only those aspects peculiar to emotional response experim tation will be discussed.

Choice of Species: The species should have a read measurable emotional response pattern. If psychophysiolo cal recording techniques are to be used, they should be th oughly understood as they apply to the species at hand bef experimentation has begun. Often this implies taking a c siderable amount of time to familiarize oneself with the te niques appropriate for the species.

Choice of Motivator: The motivator should be an ev known to produce an emotional response in the species volved, such as the onset of stress.

Choice of Experimental Situation: There are two main irements involved: (a) The animal should be placed in a uation in which its emotional responses can be easily recog- ed and scored with respect to intensity and duration. This ans either attaching the animal to physiological measuring vices such as a modified plethysmograph or respirometer, else having the animal in an open field where a trained ob- ver or recording device can assess the animal's known otionally related behavior patterns, such as amount of ac- ity and defecation. (b) The emotion-provoking stimulus occur in two ways: either as an incident occurring while animal is being observed but out of range of its senses ESP or clairvoyance paradigm), or an incident occurring the animal itself shortly after it is observed (precognition radigm).

Conclusions

The guidelines offered above are intended to bring together methodologies of animal behavior research and parapsy- ology. Each has much to offer the other. I have tried to w earlier how both disciplines can benefit from good earch on the question of psi in animals.

Most of the studies cited above were lacking in some as- t of methodology. Few if any of them were carried out der the optimal conditions undoubtedly desired by the ex- imenters themselves. As better-trained personnel becomes erested in the field, and as more space, equipment, and an- als are made available to those desiring to do anpsi work, situation will change. Only through such change and ough constant improvement in technique and research so- istication can progress be made in our understanding of the sible presence and function of psi in subhuman species.

REFERENCES

Bechterev, V. M. "'Direct Influence' of a Person upon the Behavior of Animals." *Journal of Parapsychology*, Vol. 13, September, 1949, 166-176.

Bestall, C. M. "An Experiment in Precognition in the Laboratory Mouse." *Journal of Parapsychology*, Vol. 26, December, 1962, 269. (Abstract.)

3. Brown, F. A., Bennett, M. F., and Webb, H. M. "A Magnetic Compass Response of an Organism." *Biological Bulletin*, Vol. 119, 1960, 65-74.
4. Duval, P., and Montredon, E. "ESP Experiments with Mice." *Journal of Parapsychology*, Vol. 32, September, 1968, 153-166.
5. ———. "Further Psi Experiments with Mice." *Journal of Parapsychology*, Vol. 32, December, 1968, 260. (Abstract.)
6. Erickson, R. Personal communication.
7. Hardy, A. "Biology and ESP." In J. Smythies, ed., *Science and ESP*. New York: Humanities Press, 1967.
8. Hinde, R. A. *Animal Behaviour*. New York: McGraw-Hill, 1966.
9. Kindermann, H. *Lola, or the Thought and Speech of Animals*. (Trans. from the German by Agnes Blake, with a chapter on "thinking animals" by Dr. Willian Mackenzie.) New York: Dutton. (No date; first German edition, 1919.)
10. Klopfer, P., and Hailman, J. *An Introduction to Animal Behavior*. New York: Academic Press, 1967.
11. Levy, W., Mayo, A., and Andre, E. Personal communication.
12. Mackenzie, W. "Rolf of Mannheim: A Great Psychological Problem." (With notes by J. H. Hyslop.) *Proc* A.S.P.R., Vol. 13, 1919, 205-284.
13. Maeterlinck, M. *The Life of the White Ant*. (Trans by A. Sutro.) London: Allen and Unwin, 1928.
14. Marais, E. *The Soul of the White Ant*. (Trans. by W de Kok.) New York: Dodd, Mead, 1937.
15. Marler, P., and Hamilton, W. *Mechanisms of Anima Behavior*. New York: Wiley, 1966.
16. Matthews, G. V. T. *Bird Navigation*, 2nd ed. Cambridge: Cambridge University Press, 1968.
17. Morris, R. L. "Some New Techniques in Animal Ps Research." *Journal of Parapsychology*, Vol. 31, December, 1967, 316-317. (Abstract.)
18. Morris, R. L., and Warren, L. Unpublished manuscript
19. Osis, K. "A Test of the Occurrence of a Psi Effect between Man and the Cat." *Journal of Parapsychology* Vol. 16, December, 1952, 233-256.
20. Osis, K., and Foster, E. B. "A Test of ESP in Cats."

Journal of Parapsychology, Vol. 17, September, 1953, 168-186.

Pfungst, O. *Clever Hans.* (Ed. by Robert Rosenthal.) New York: Holt, Rinehart and Winston, 1965. (lst Am. ed., trans. by C. L. Rahn. New York: Henry Holt, 1911.)

Pratt, J. G. "The Homing Problem in Pigeons." *Journal of Parapsychology,* Vol. 17, March, 1953, 34-60.

———. *Parapsychology: An Insider's View of ESP.* New York: Dutton, 1966.

———. Personal communication.

Rao, K. R. *Experimental Parapsychology.* Springfield, Illinois: Thomas, 1966.

Reik, T. *Listening with the Third Ear: The Inner Experience of a Psychoanalyst.* New York: Farrar, Straus, 1949.

Reitler, R. "ESP in a Primitive Animal." *Indian Journal of Parapsychology,* Vol. 3, 1962, 1-11.

Rhine, J. B. "The Present Outlook on the Question of Psi in Animals." *Journal of Parapsychology,* Vol. 15, December, 1951, 230-251.

———. "The Problem of Psi-missing." *Journal of Parapsychology,* Vol. 16, June, 1952, 90-129.

———. "Experiments with Dogs." Paper presented at the Winter Review Meeting of the F.R.N.M., Durham, North Carolina, January 2-3, 1970.

Rhine, J. B., and Feather, S. R. "The Study of Cases of 'Psi-trailing' in Animals." *Journal of Parapsychology,* Vol. 26, March, 1962, 1-22.

Rhine, J. B., and Rhine, L. E. "Second Report on Lady, the 'Mind-reading' Horse." *Journal of Abnormal and Social Psychology,* Vol. 24, 1929, 287-292.

Richmond, N. "Two Series of PK Tests on Paramecia." *Journal* S.P.R., Vol. 36, March-April, 1952, 577-588.

Stevenson, I. Personal communication.

Stump. J., and Morris, R. L. Unpublished manuscript.

Sumner, F. B. "Human Psychology and Some Things that Fishes Do." *Scientific Monthly,* Vol. 49, 1939, 245-255.

Tinbergen, N. *Animal Behavior.* New York: Time Inc., 1965.

White, R. A. "The Investigation of Behavior Suggestive of ESP in Dogs." *Journal* A.S.P.R., Vol. 58, Oct ber, 1964, 250-279.

39. Wood, G. H., and Cadoret, R. J. "Tests of Clairvo ance in a Man-Dog Relationship." *Journal of Paraps chology*, Vol. 22, March, 1958, 29-39.

THE STUDY OF CASES OF "PSI TRAILING" IN ANIMALS

J. B. Rhine and Sara R. Feathers

It is suggested that the reader study the preceding paper, si and Animal Behavior: A Survey," by Dr. Morris, before amining this text on what we might call a major subdivin of ESP in animals—or "anpsi," as researchers have me to call this category. The phenomenon of a cat or dog naging to trail their masters over long distances and peris of time is frequently reported, and Dr. Rhine and his ughter, Dr. Feathers, collaborated in this comprehensive dy of a very common yet elusive pattern of animal behav. Their paper originally appeared in the Journal of Paraychology *(Vol. 26, No. 1, March, 1962).*

Ever since the occurrence of ESP was established as a hun capacity, the question of its relation to the biological ture of the organism has been one of the most inviting blems awaiting solution. If, for example, the species disution of psi could be ascertained with reasonable acracy, that would be an important advance in the attempt to derstand the relation of psi to man himself. A number of ociated problems (such as the evolutionary origin of this nction, its localization in the structure of the organism, the estion of its inheritance, its biological survival value, and ny other problems) could be taken up in due course with vantage, as could also the practical problem of finding the t "guinea pig" species for the facilitation of the research. would therefore seem profitable for parapsychology to look oss the species line, as is the custom among natural ences in general, to see how far an ability observed rather lely in the human species can be found to be distributed oughout the animal kingdom.

Exceptional animals have figured in the literature
parapsychology from time to time, more often than not in
very doubtful status. Because of this uncertainty, an extensi
review of this older material would hardly be justified; discu
sion even of the famous Elberfeld horses and the dog, Ro
of Mannheim may well be omitted. The first reported attem
to conduct controlled psi experiments with animals appears
have been that of Bechterev[1] in 1920, who tested two circ
dogs for telepathy. In 1929, J. B. and L. E. Rhine report
their tests for telepathy with Lady, a Richmond (Va.) filly
They, like Bechterev, interpreted their results as favoring t
hypothesis of telepathy. But none of the studies of ESP du
ing the first half of the century represented a systematic a
tack on the problem of psi in animals.

In 1950, however, the Duke Laboratory began a survey
the available material on unexplained animal behavior whic
suggested the possibility of psi. This material had three ma
divisions: (1) studies of migratory direction-finding in bir
insects, and certain marine animals; (2) field experiments
the homing behavior of mice, cats, pigeons, dogs, and a fe
other species; and (3) anecdotal cases of odd behavior of d
mestic and domesticated animals. This survey confirmed t
suggestion that there were large areas of animal behavi
which could not be adequately explained by known princ
ples, and to which a psi explanation conceivably could appl
The situation, as Rhine[5] described it in 1951, seemed to ju
tify the launching by the Duke Laboratory of an experime
tal program focussed on the question of whether anima
have psi ability.

The resulting experimental attempts included, among oth
efforts, some as yet unpublished ESP experiments by J.
Rhine with dogs, others by Dr. Karlis Osis and his associat
with cats,[2,3] and still others on pigeon homing by Dr. J.
Pratt and colleagues.[4] Numerous claims of "talking," "calc
lating," and "thinking" dogs such as Chris[7] have been e
plored in the attempt to arrive at adequate methods for rulin
out sensory cues. After a decade of this experimental effo
however, it has become evident that although generally si
nificant, and in many respects valuable, results have been o
tained, the question of psi in animals has not been and is n
likely to be answered in a decisive way by the lines of expl
ration thus far attempted. Too many unresolved difficulti
have been encountered. For example, where there has bee
the necessity of working under field conditions (e.g., in p

on experiments), uncontrolled environmental factors have
ade it hard to discover conclusively whether psi was oper-
ing, although unexplained behavior was obtained. In other,
ore controllable experiments in which the results were at-
butable to psi, it was still difficult to prove definitely that
ey were due to psi in the animal instead of in the experi-
enter, although the evidence suggests they probably were
e to psi in the animal. Consequently, there are difficulties
ll to be overcome before further experimental effort seems
ofitable under present limitations.

A new approach to the "anpsi" (psi in animals) question is
early needed, one that will be definitive enough to bring this
oblem to a conclusive stage. Accordingly, as a start, a re-
amination has been made of some of the material which
iginally raised the question of psi in animals, i.e., reported
stances of puzzling animal behavior in the natural state.
e hope is that this material may yield clues to the spon-
neous operation of anpsi which will suggest a better experi-
ntal approach and justify a renewal of effort in that
ection. Of the three classes of "unexplained animal behav-
" listed above, the anecdotal material appears richest in
s special promise, and the Duke collection of anpsi case re-
rts has now grown large enough to warrant such a study.

The collection consists of about 500 cases which have been
t to the Laboratory, mainly by readers of popular articles.
is rather casual but effective method of collection pre-
des reliable impressions on secondary questions such as
ose of the distribution or frequency of this type of behav-
, but the material does strongly suggest that ESP occurs in
ecies other than man. Five general types of behavior pat-
ns which suggest psi as a factor have emerged in this col-
tion: (1) behavior which suggests reaction to impending
nger to the animal itself or to its master; (2) behavior
ich suggests reaction to the death of the master at a dis-
ce; (3) behavior which suggests anticipatory reaction to
master's return; (4) homing behavior; and (5) "psi-
iling" behavior.

The last-named group, psi-trailing, is the one considered in
report. It consists of those cases in which an animal, sep-
ted from a person or mate to whom it has become at-
hed, follows the departed companion into wholly
familiar territory and does so at a time and under condi-
ns that would allow the use of no conceivable sensory trail.
uch cases occur as reported and the distances are enough

to exclude locating the person or mate by accident, then the animals would have to be guided by a still unrecognized means of knowing. This, of course, would call for the psi hypothesis.

Although fewer in number than the other groups, the psi-trailing cases allow the fewest alternatives to the psi hypothesis, and for this reason they offer a more clear-cut case for anpsi. Therefore, they are discussed first in this series of studies.

A necessarily arbitrary way had to be found of handling these reported cases for the purpose of determining what they contribute. While spontaneous cases by their nature can hardly provide the conclusive type of answer required in the long run, still some system of appraisal is necessary for the degree of weight needed at this stage. Certain elements can be measured to a useful extent by comparing them from case to case and from one group of cases to another. The following "working rules" have been developed for such use in grading the material here discussed.

Criteria for Appraising Psi-trailing Cases

1. *Source and Amount of Information.* The main question concerns reliability. Is the report a serious and honest one e.g., can the consideration of hoax be reasonably well dismissed? How cooperative and generally competent are the persons providing the information? Of course, a first source of information may be inaccurate but may lead to a more reliable one. At the other extreme, a first report may bring unwanted publicity and dry up the source from which any further information would have to be obtained.

2. *Identification.* There are two general sets of characteristics, *physical* and *behavioral*, which provide a basis for deciding whether the animal in question actually is the one it is supposed to be. The physical characteristics are in most instances the more distinctive. Sex, size, breed, color, and general condition are naturally taken into account. Special characteristics of color and length of hair, special spots, eye color, and the like extend the basis of judgment. Also, the value of the case is greatly increased if there are any unique physical characteristics such as a veterinary operation, a well-known scar, an obvious deformity, a familiar collar, or a tattoo mark. The examination may be carried as far as the

isting records from before and after the animal's journey
ll allow. Photographs, if available, may be used in the judg-
nt.

Distinctive behavioral characteristics are of value, although
y allow more possibility for errors of judgment. Something
t one dog or cat familiarly did at home may be something
other dog or cat might conceivably do. And yet there are
ne types of behavior so unusual that they are very convinc-
, at least for the persons to whom they are familiar. Thus,
log that sits on the back seat of his master's car with his
ws on the back of the front seat behind his master as it
merly had done gives some identification value. And the
which, just like the one left behind, jumps to the piano
nch beside his human playmate and accompanies her play-
by front-foot taps on the keys is also displaying familiar
havior that goes far toward identifying the animal. To eval-
te individual behavior reliably requires a broad ac-
aintance with animal characteristics by which to appraise
uniqueness, but this evidence from behavioral characteris-
s does have its value.

3. *General Circumstances.* Under this heading are con-
ered bits of information that determine whether the story
akes sense" and stands up well. The story of the animal's
appearance needs to be considered in relation to that of its
pearance at the end of its journey. Is the time between the
o dates long enough? Did the animal arrive in a state that
es indication of much travel? Did it find the family at the
w home or was it picked up in the vicinity? Did its behav-
on arrival indicate signs of recognition? Allowance may
ve to be made for possible interim experiences; an animal
y have been adopted en route, and perhaps given a collar
ll worn on arrival. These circumstances are important in
ecking the general validity of a case.

4. *Supporting Data.* In some cases statements are available
m independent witnesses; in others, the expert opinion on
ne important point may be contributed by the veterinarian;
d in still others, supporting facts may be contributed by
rsons who have had contact with the animal en route from
location to the other. These verifying data are especially
lpful when there is a clearly identifying physical character-
ic involved. How many people can recall the special de-
rmity of the animal? Did the family members indepen-
ntly recognize the pet? Are there litter-mates available for
mparison?

The importance of this general type of appraisal is large dependent upon the number of cases available, although i an inverse manner. Obviously, to take the extreme view, psi-trailing cases were common everyday events where pe are concerned, one would scarcely need to give a secon thought to verifying the reports. Or if they were even as common as homing cases, there would need to be little concer with these authenticating procedures, since there are hundred representative homing cases to one in the trailin category. However, because of the relatively small number o trailing feats that suggest psi and because of their very larg potential significance, it seems worth while to take the time t authenticate such facts as may be available, as did the earl collectors of spontaneous psi experiences in humans. Accordingly, this present effort represents something of a departure from current policy in the study of spontaneous cas material in human beings.

The Psi-trailing Case Collection

The collection of psi-trailing cases is, as already indicate relatively small. It has been further reduced in size by th screening-out of reports that fail to meet the criteria jus listed. The applications of the case criteria which result i these eliminations are important enough to merit illustration.

In one case, that of a dog with identification number tattooed on it by the U. S. Army, the owner, an itineran painter, could not be located. In still another case of reporte psi-trailing by a dog, the family were at first enthusiasticall confident and outspoken regarding the certainty of the identification of the animal, and then suddenly turned silent i the midst of the publicity and refused further comment, eve an explanation of their silence.

It is not unusual to meet a lack of continued response an cooperation at some stage of persistent searching for information. When this happens, the case falls to a lower valuatio even though it may not deserve to be completely discarde Similarly, with respect to the animal itself, where there are n sharply distinctive features for identification (e.g., the pet simply too typical and undistinguished) a case may still b considered admissible on a level of restricted value if a other considerations are favorable.

We have omitted from the collection historic cases th e appeared in the animal anecdotes of the past, striking interesting though some of these are. Among them is the y of the greyhound Cesar who followed his master from tzerland to the court of Henry III in Paris where the mas- had gone three days earlier by coach. A. E. Trapman, in book *Man's Best Friend,*[8] tells of a dog named Prince managed to find his way across the channel to his mas- side in France during the First World War. Such cases, ourse, are beyond reach of the verification necessary for eptance for this study.

Vhen all screening is done, there are in the collection ap- ximately 54 admissible instances of what appear to be trailing in animals: 28 of them with dogs, 22 with cats, 4 with birds. There is no absolute basis of judgment as to t number is sufficient for profitable examination. Any e derived from such a study must depend not only upon number but also upon the quality of the cases, in the at- pt to judge how far they go to justify further attention to question of psi ability in these different species.

hese remaining cases can be roughly ranked or grouped ording to how well they meet the before-mentioned eria of appraisal. Since the number of cases is still too e for a full presentation, illustrative examples of these dif- nt grades of completeness are presented together with the ber of similar cases at each level. According to this plan raded improvement, the presentation explains the limita- s that keep some cases from being their best in contribut- an impression of ESP performance.

erhaps the most common limitation is the lack of suffi- tly identifying characteristics. The case of the cat, ky, illustrates this difficulty. In 1959, according to a story got into the press by way of the veterinarian, Dr. L. K. nd his family had to leave their cat behind when they ed from Poughkeepsie, N. Y., to Livermore, California. ky was away from home at the time of their leaving. months later, however, a cat arrived at the new home in rmore, and the R. family recognized it as their pet.

he cat was thin but not in poor condition, except for a on its back. Sex (male) and color (white) were correct, Mrs. R. stated that not only was the size of the cat the as that of the original Sparky, but the unusual color of eyes and the character of the fur were appropriate. She d that there was a characteristic crook in the cat's tail. he behavioral side, there were appropriate indications, according to Mrs. R. One of these features was the (not ve unusual) tendency of the cat to wander off for days at a tir on hunting expeditions.

However, as Mrs. R. recognized, there was no compelli characteristic that would identify Sparky, although she a her husband were rather confident about him. Even thou the cat which arrived in Livermore was a good hunter, su as might be able to live off the country, there remains t possibility that another white male cat of the same size, w unusual eye color and a crook in his tail, might accidenta have appeared on the scene as a stray cat. The case wou therefore, be much stronger if identification were more de nite.

Among cases of this general category having a similar r ing there are three concerning dogs and one other concerni a cat.

Another limitation in some cases comes from the fact tl the distance involved in the trailing feat is not great enou to be impressive—at least to the more cautious mind. T case of a cat named Dougal is an example of this ty About 1935 (the case was reported in 1951) the W. G. family of San Marino, California, was returning home fr Laguna Beach, bringing with them a kitten of mixed bre named Dougal which they had raised at the beach cotta about 55 miles away. Dougal was then about eight mon old. (A brother kitten had already been taken to the S Marino home.) The family stopped at San Gabriel, a c tance of six miles from home, to see how the kitten was g ting along in the basket on the trailer. They discovered basket had come open and the cat was not there. A thorou search was made but the kitten was not found, and tl drove on. About two weeks later, Dougal was found in living-room playing with Sandy, the brother cat. The init tive of one cat finding the other is credited to Dougal, on strength of the fact that Sandy had been castrated and not given to wide-ranging travels. There was no problem identification, since the time was short, the two kittens w so much alike, and Dougal's markings were sufficiently tinctive.

The distance Dougal must have "trailed" was not kno with certainty, of course—only that he was lost somewh between six and 55 miles from home. We must allow that shorter distance may have been closer to the actual one, although Dougal was in entirely unfamiliar territory, since

l not been to the San Marino home, the possibility of his
ling his way through accidental good fortune and explor-
y efforts of his own cannot be sufficiently delimited to
ke as strong a case as do those reports which involve
ch longer distances. It is true, the area covered by a radius
ix miles is over 100 square miles, and the cat's task of
ing its family by mere chance in a well-populated area of
magnitude would be immensely difficult to explain. But
en examples are few, the possibility of odd coincidence
st receive more consideration.

f this type of short-range trailing there are 18 cases of
s, 10 others of cats, and one of birds. The dividing line
short-range trailing is arbitrarily placed at 30 miles.

third type of limitation on the value of a trailing case is
lapse of time since the event. The case of a Tennessee
n dog, Old Taylor, illustrates this point. It was reported
Dr. R. O. F., a retired minister (deceased since the report-
). When Dr. F. was a boy on the farm in east Tennessee,
Taylor was an important member of the farming team.
ecially because of the way he handled the stock and saw
the cows were brought in and each directed to its proper
.

hen came the separation when young F. went to Wash-
on College, about 100 miles away. His mother and sister
t along to make a home for him while he attended
ol, leaving his brother and Old Taylor to look after the
n. Old Taylor, according to George's letters, showed signs
eep loneliness; and finally, on Thanksgiving morning, he
eared, whining and scratching at the front door of the
dence the family had established at the college. After a
days of recovery he settled down to the new life well
gh; but George, in his turn, was distressed and wanted
Taylor back. After two weeks in the college town, Dr. F.
es, he fed Old Taylor well and took him outside, giving
the command that had always been given that sent him
to round up the cows for milking time. This he repeated
nnly and sternly, and Old Taylor went back to the farm,
onger discontented, according to the story.

beautiful tale as it stands on the word of Dr. F.; but the
members of the family were gone and with them the
s of checking on Dr. F.'s memory. Along with the other
in the collection, this one has a certain value; but it is
usly limited by the remoteness in time.

There are two other dog cases and two cat cases in th category.

A fourth type of limitation encountered in looking f more or less adequate cases of psi-trailing is that of meetin resistance in getting information about the case. Of course, the blockage is complete, the case cannot be considered at a But there are cases in which the information is sufficient justify some consideration, and yet the full value of the ca cannot be realized because of someone's refusal to commun cate. The case of a mongrel dog, Wiggles, is a good exampl Wiggles belonged to the family of a Pittsburgh law studen D. C. R., and had been left at an animal shelter in Eri Pennsylvania, when the R. family moved to Pittsburgh. Som months later, Wiggles was found asleep on the back porch the four-year-old son of Mr. and Mrs. R.

Mrs. R. responded cooperatively in telephone conversatio confirmed the story (which had appeared in the press), an added that the dog had arrived in very bad condition and ha died a few days later. The dog had responded to his nam and showed excited pleasure over the little boy, licking h face eagerly. Mrs. R. remembered that Wiggles had arrive with something around his neck (she thought it was a colla that helped to identify him. She was certain the dog ha never been in Pittsburgh although she recalled that he ha once traveled with the family to Beaver County, adjoinin Allegheny County, while the family had lived in Erie. (Th would have brought the dog to something like 30 miles fro Pittsburgh.)

However, Mrs. R. said that while she and her husban were both convinced that the dog was really their own, he husband had been extremely embarrassed over the teasing his friends about the publicity the case had received. A though she herself had promised to give added informatio and details concerning the identification of the dog, it d veloped later that her husband refused to allow any furthe comment to be made. Accordingly, whatever added poin there were that had originally convinced this young man tha this was indeed his own pet dog were not available for the r port, because of his stubborn silence. The case takes a lowe rating as a result.

There is one other dog case with this limitation.

A fifth group of cases, although of greater value than th previous groups, still is small in number. These are limited b offering mainly behavioral evidence for identification. Th

y of King, a large mixed Belgian shepherd, fits into this
gory. Mrs. L. B. said King was four years old when her
sons, aged sixteen and fourteen, left Sandpoint, Idaho,
Richmond, California. King had disappeared several
ths before the family moved in 1948 (he had been
n, Mrs. B. believed). About three months after the
ly arrived in California, they found a dog they believed
e King lying in front of their apartment door one morn-
King showed great joy over meeting the boys, and they
sure he was theirs. His paws were in bad condition
n he arrived.

ysically, King was correct as to size, sex, and color; but
e from the scar which the boys remembered and found
is foot, there was no peculiar marking to identify him.
behavior was more characteristic. He had a habit of
ing a nap on the sofa when no one was in the room, and
ould invariably shake hands with the left paw. Riding in
ar, he would sit on the back seat and put his front paws
e shoulders of the people in the front seat, rising up now
then to nuzzle a cheek. When petted, he would stand up
put his paws on Mrs. B.'s shoulders.

the boys, who had played with the dog since his puppy-
l, his behavior was familiar, and little reactions, such as
islike of hissing noises, meant something to them, as did
the habit the dog had of laying his head on the boys'
s. But behavioral characteristics are, as we have stated,
omparatively low identification value, and it is not likely
any case could be adequately definitive on this basis
e, even though, in the case of King, there were support-
witnesses in the person of two other members of the
y (making five in all) who saw the dog before and after
vent.

is cannot be considered one of the more complete classi-
ons. There are only two other cases, both concerning
that could be considered of this same rank.

Special Identifying Features

ere is a small collection of cases which rates highly, pri-
y because of the reported presence of exceptional physi-
atures which tend greatly to reduce the likelihood of
ken identity. Of course, no single characteristic is ever
to give an all-sufficient basis of identification, unless,

perhaps, it is the tattooed number or noseprint of a dog
the band on a bird. But, added to other physical and behavi
ral marks of identification, these special features are of di
tinct value.

Occasionally there is a case involving an exceptional ind
vidual birthmark, as, for example, the case of Smoky,
three-year-old Persian cat whose color was indicated by h
name. Smoky belonged to the family of Mr. W. M. M.,
business executive in Tulsa, Oklahoma, at the time the eve
occurred. The family was traveling by automobile in 193
along with Smoky, on their way to Memphis, Tennesse
where they were to make their home. At Broken Arro
Oklahoma, 18 miles out of Tulsa, the cat was lost when th
car stopped, and the family had to go on without him. Tw
weeks later, neighbors back in Tulsa reported that Smoky wa
again seen for a time around the old home. Then, a ye
later, a cat which the M. family (including a fourteen-yea
old daughter) recognized as Smoky came onto the fro
porch of the Memphis home and stayed, as if it were
home. It jumped into the daughter's lap and when, as a te
she went to the piano and began playing, the cat, as Smo
had been wont to do, jumped up on her right side (whi
was the correct side) and placed his front paws on the ke
in the way characteristic of the cat in Tulsa. Other types
behavior such as riding in the back window of the automobi
or waiting for the daughter's return by perching in the fro
window near the door of the house were in line with t
memories of the Tulsa Smoky.

But it was the physical picture that was most distinctiv
The sex, size, hair, and almost solid color were appropria
for Smoky, but the distinctive feature was a tuft of dark r
hair under the cat's chin on the throat. When the M. fami
recognized this spot of color, they felt certain that this wa
indeed, their own Smoky.

There is one other case on record where the physical mar
ings are the most distinctive feature, and that concerns a c
named Missy that followed the B. family of Lyles, Tennesse
to Chattanooga, about 200 miles away. The otherwise
brown-and-white, part-Persian cat was distinguished by t
presence of a coal-black stripe on each of its back legs an
in addition, had an unmistakable brown circle on the rig
side of the face next to the nose. Photographs and witness
reports all suggest that these markings make the cat a ha
one to mistake.

One of the other types of physical oddity of greatest iden- cation value is that of distinct bodily deformity. The story the long trek of Sugar provides an excellent example. gar was a cream-colored cat with a Persian emphasis, ised from kittenhood by the family of Mr. S.A.W., a school ncipal in Anderson, California. When Mr. and Mrs. W. d their ten-year-old daughter were about to set out by auto- bile in 1951 for Oklahoma, they intended to take Sugar th them. But the cat leaped from the car window, could t be caught (his fear of cars was well known), and had to left behind with neighbors who had Sugar's litter-mate. urteen months later, according to Mrs. W., as she was nding in the cow barn with her back turned toward an en window, a cat leaped on her shoulder. Although startled that she brushed the cat off her shoulder, she immediately narked to her husband, "Sugar has come to see us." The entification was regarded as a joke until, a few days later, ile stroking the cat, which had made itself entirely at me, Mrs. W. felt a bone deformity on the left hip joint. e bone extruded far enough that it was easily felt by pass- the hand over the cat's back. Mrs. W. then recalled, as other members of the family, that Sugar had had this culiar bone deformity. At this point the family decided that cat really was Sugar. But nothing was said between the family and the neighbors back in California with whom gar had been left, so that, a few months later, when this nily visited Oklahoma, they exclaimed in surprise at en- untering Sugar and asked how the cat had got there. They, , remembered the bone deformity. On hearing the story m the W. family, they revealed the fact that Sugar had yed only about 16 to 18 days after he had been left with m, but they had not had the heart to inform the W.'s that had been lost.

One of us (J.B.R.) visited the W. family in Gage, Okla- ma, while Sugar was still alive, and found the bone de- mity as described. Whether or not it is strictly unique, it uld be difficult to say. But thus far no such other anatomi- deformity of this type has been brought to our attention. s noteworthy that the defect seemed to have no handi- ping effect upon Sugar's movement. He was an extraordi- ily strong, steady, and vigorous male cat, who, Mr. W. l, was an exceptionally able hunter. The cat would come after his night's hunting sometimes with a half-grown jack bit. Stray dogs and coyotes were no match for him, and

Mr. W. said he had never seen a dog give Sugar any trouble Such a cat would be able, if any quadruped could, to mak its way over the extremely rugged terrain in the 1,500 mile between California and Oklahoma, provided he could find th way.

The supporting data from the witnesses are of good quality, as are the behavioral data. The action of a cat in leapin onto the shoulder of a stranger would be incredible if the ca were a stray. But, unquestionably, the deformed hip bone i what makes the case outstanding. (The W. family agreed t donate Sugar's skeleton to the Parapsychology Laboratory but unfortunately the cat disappeared—presumably meetin its death on one of its hunting trips.)

In another case, that of the cat Sissy, the animal in question was reported by the owner to have the same slanting an projecting tooth as his former counterpart had had. However upon close inspection this was actually found to be an ordinary tooth seemingly different because the one on the othe side was missing.

One moderately good mark of identification in an animal i its man-made collar if this is still retained on arrival. Th case of the dog Tony is one in which the collar survived th trailing ordeal and served to identify the animal. Tony was rather small black dog of mixed breed, about one year old and had been raised from puppyhood by the family of Mr. L M. D. of Aurora, Illinois. When, in 1945, the family move to East Lansing, Michigan, the dog was returned to th family that had given him to Mr. D. as the D. family set ou by automobile for East Lansing. But the dog disappeared th same day and six weeks later appeared, running circle around Mr. D. as he stood talking on a street corner in hi new home town. When Mr. D.'s attention was eventually a tracted by the dog's behavior he stated at once that this wa Tony, and he took him home. The family, including the tw boys who had played with Tony, all agreed. The dog wa wearing the collar which Mr. D. had himself cut down to siz for him. Mr. D. had made the right-angle hole with hi pocket knife, as he well remembered; but on the collar ther was now a dog tag and number indicating that the dog ha been licensed in the neighboring county to the south. Ton was extremely friendly. Mr. D., feeling entirely sure that th dog was his and wishing no complications since he was dete mined now to keep this loyal friend, threw away the colla tags and all. The story reached the press without th nowledge of the D. family when their minister told it to anther parishioner who was an editor.

Mr. D. wrote to the family in Aurora with whom Tony ad been left and learned then of the dog's hasty departure, ut the family in Aurora were so incredulous that they drove East Lansing to see the dog. The filed statement from this amily indicates complete conviction on their part as well oncerning the identity of Tony.

In addition to the identifying collar, Tony had some disnctive physical features. For one thing, he had a peculiar, mproperly cut tail. (Mr. D. testified it had been a home-ade job.) He also had, in his otherwise all-black coat, a ender, almost invisible, white line running under his chin, own the neck between his front legs. He was obviously a ongrel, but with his peculiar stub of a tail, with hair rowing out on the end of it, he would not easily be confused ith any other common mongrel dog. Behaviorwise, he was uick to make friends and to demonstrate his affection in a uietly acceptable manner. It seemed to J. B. R., after a visit the D. home, that Tony would not likely be forgotten by is owners and playmates in six weeks' time and mistaken for ny other dog. Add to it all the familiar collar, and Mr. D. ould have had no trouble in clinching the case to his own tisfaction. Mr. D. himself is a business executive. The man om Aurora who confirms the dog's identity is a banker.

Other types of physical earmarks of identity may be found a few cases. The story of Chat Beau is such a one. Chat eau was a solid white four-year-old male cat, at least half ersian, belonging to the family of Mr. J. C., although he ally was the special pet of the eight-year-old son, Butchie. he C. family, whose home had been in Lafayette, Louisiana, ade a temporary visit to Texarkana, Texas, 294 miles away, look for a house. While they were away, their cat disapeared and was not seen again. Mr. C. remained in Texkana, and in January, 1954, Mrs. C. and the two children llowed him there. About four months later they found Chat eau, too, in Texarkana.

The cat appeared first around the school where Mrs. C. s teaching and where Butchie was a pupil. They first heard out him from other children, who said he ran from them. ut when Butchie saw the cat, he walked right up to him, cked him up, and said immediately, "It's Chat Beau!" tchie's mother, on seeing the cat's behavior, was likewise nvinced of its identity. Chat Beau had been raised by the

C.'s collie along with her pups and had learned to growl like a dog and bite when angry. Also, he answered to a whistle. All of these behavioral responses were found in the newly discovered cat. Moreover, the dog and cat both lay down to sleep beside each other as formerly.

The physical characteristics in general were not distinctive, and the all-white coat was unspotted. However, there were two exceptional physical characteristics that, together, made a well-pointed identification. The cat showed the same scar in one eye, which prevented him from closing the eye all the way, that Chat Beau had had in Lafayette. (There was also a nick in one ear, although in a tom cat such nicks are not so distinctive.) The other identifying feature was the presence on the cat's tail of tar that Chat Beau had acquired in Louisiana and which, at the time, Mrs. C. had been unable to wash out completely. Some of this black stain still remained when he arrived in Texarkana, which was to her the clinching evidence.

Among other considerations that enter into the judgment was the extremely worn state in which the cat arrived at the school, and his distinctive behavior with regard to Butchie as contrasted to that shown the other children. The testimony of three visitors from Lafayette who knew the cat, one of them having been the owner of Chat Beau's Persian mother, are also good points in assessing the significance of the case.

And, finally, in the evaluation of trailing cases there is another category provided by registered animals. The incomplete case of the tattooed dog illustrates the category although it adds nothing to the evidence. The story of Pigeon 167 is a much more convincing one. The owner of the pigeon, Mr. H. B. P., was, at the time of the incident (1940), only twelve years old, and an honor student in the eighth grade in Summersville, W. Va. He was the son of the man who at that time was county sheriff. The pigeon, evidently of a homing strain, had stopped in his back yard and on being fed and cared for, had stayed and become a pet. Sometime later the boy was taken to the Myers Memorial Hospital at Phillippi, 105 miles away (70 miles by air) for an operation, and the pet pigeon was left behind at Summersville. One dark, snowy night about a week later, the boy heard a fluttering at the window of his hospital room. Calling the nurse, he asked her to raise the window because there was a pigeon outside, and just to humor the lad, she did so. The pigeon came in. The boy recognized his pet bird and asked her to look for the

mber 167 on its leg, and when she did she found the num-
r as stated.

The boy's parents, arriving at the hospital a few days later,
re surprised at finding the pigeon, which the hospital had
owed the lad to keep in a box in his room. The circum-
nces appear to rule out the possibility that the pigeon had
erely followed the car that transported the boy. According
the report, the pigeon was seen around the home after the
y had left. For that matter, a pigeon's finding the right
ndow at night in a snowstorm is extraordinary in more
an one respect.

The case received considerable attention at the time, in-
ding local newspaper coverage and a broadcast on a
lumbia radio program, "Strange As It Seems." The nurse
the hospital who was responsible for admitting and identi-
ing the pigeon was recorded as confirming the account.

Discussion

The collection of examples of psi-trailing will naturally
oceed with a continuing search for still better cases, quite
ssibly with a wider range of effort, more assistance, and
me added criteria of identification. There may, for exam-
e, be more expert bases of checking identification than have
therto been used; these might include not only nose prints
t also blood tests, hair characteristics, and the like in cases
which litter-mates are available for comparison.

Recognizedly, an inquiry that begins with spontaneous
ses should try to move on toward a situation permitting ex-
rimental verification of the hypothesis suggested. But to in-
oduce experimental controls in a situation in which such
ontaneous behavior might occur would be impractical in
i-trailing (i.e., deserting pet animals when the family
oves), even if it were not inhumane. The very fact that so
w of the animals that are separated from their human com-
nions do manage to find their way to them is warning
ough that an uncertain capacity is involved, at least in
me essential respects. The orienting ability, of course, is not
e only relevant variable. Factors of motivation and the abil-
to overcome the difficulties of subsistence, travel, encoun-
rs with enemies, and terrain are all important to the
imal's success, as are basic determinants of disposition and
neral intelligence of the animal. So it would appear wise

for any experimental approach to move the investigation o the problem out of the range of the hazardous variables involved in the life situations.

On the other hand, to move into a laboratory situatio with adequate controls also seems insuperably difficult; the essential psychological conditions in the animal could not—a least with present knowledge—be provided within the confines of the fully controlled situation.

But if we recognize that the controlled experiment is no yet a feasible approach to this problem, and also that the attempt to approximate a given spontaneous performance is unrealistic, this does not mean that we must cease to attempt more conclusive study based on the psi-trailing idea. If ther is to be success by way of an improved procedure, it ma have to be something experimental in a limited way and complementarily, spontaneous to a certain degree. Some o the more reasonable possibilities along these lines will b briefly considered.

The first suggestion is that an effort be made to approximate some of the trailing cases found among birds, for no only do they seem more feasible than those of quadruped but also the risk of introducing an inhumane element woul be much less. Consider, for example, another pigeon cas which has not so far been mentioned. According to the report, a California family was making a trip from Redond Beach to San Francisco, a distance of about 500 miles. Sinc it was to be a visit of some length, the family took with them a pair of pet pigeons and their family of young squabs whic had all been raised at the cottage on the beach and had no made this trip before. About halfway there they stopped t refresh and, while they were looking after the birds, the mal pigeon flew off and disappeared in the direction from whic they had come. Although the family waited for some tim and watched as they regretfully went on their way, there wa no sign of the departed pigeon. They arrived at their destination by nightfall and hung the cage by one of the windows o the house at which they were staying. The next morning, t everyone's surprise, the male pigeon was sitting outside th window. He was then admitted to the cage with his mate.

Now if a project based on this idea were undertaken wit exploratory tact and consideration, it would be acceptably humane to investigate the ability of one of a pair of pigeons t find its way to its mate over increasingly large distances o separation. The beginning stages could be those in which

ned easier for the birds to find each other. If selected
rs were found that showed indication of success and justi-
further steps, then the distance and other conditions
ld be advanced to a stage that would be conclusive.

rom the cases at hand, it would appear possible to use
r types of birds of similar monogamous attachment and
comparable ability in meeting the requirements of flight
maintenance.

second type of semi-experimental trailing project might
developed around the case of Pigeon 167, mentioned ear-
in this paper. Here the attachment was between a human
g and a bird, and the separation was due to a temporary
e on the part of the human. This also could be adapted
ther species, as actual cat and dog cases suggest, but wis-
n would indicate that a first effort be made with pigeons.
his approach the cultivation of a strong personal attach-
it between bird and human companion would be neces-
, preferably with a single bird and without a too specific
imited locus as the home of the bird. That is, home at-
ments to a place should be played down and the attach-
it to the human companion emphasized. Hypothetically, it
ld seem most likely that in the course of developing this
tion, observation would reveal whether or not the bird
inclined to follow and find its human friend as the latter
ame separated, perhaps a few days at a time. A number
ndividual birds might be used to allow for selection of the
t promising, with, of course, an exploratory program for
eloping the type of bird-and-man team necessary.

s a third type of semi-experimental plan, suggested with
e reservations, there would be the somewhat more con-
ed experiment in which the pet animal (cat or dog), af-
being deprived of association with his favorite human
panion, would then be released in a central location with
companion located somewhere on the periphery of a
e with a large enough radius to give no sensory guidance
with wind direction taken into account). A reproduc-
of the master's voice calling him might be set off auto-
cally at the start (in such a way as to give no clue to the
er's whereabouts), and then the animal's choice of di-
on could be recorded.

s a modification of this type of approach, the release cage
it be constructed so as to allow indication of pre-release
tation on the part of the animal; for example, with six
ded doorways, so that the presence of the animal in one

of these would indicate the initial orientation. This involv adapting to an experiment with quadrupeds the methods th have been used in studying bird orientation introduced by th late Dr. Gustav Kramer. If a strong direction orientation ca be induced in a pet bird that is motivated to fly to its mate its human companion, such behavior might be indicated the use of the cage method, although it is not the mo promising approach and is farthest away from the spontan ous type of behavior with which we are beginning. It ma eventually come into the research program on trailing, as we as other psi explorations.

Enough has been learned from the experimental anp work to state with some confidence why it is advisable, if n necessary, to approach this research program with the en phasis on approximating spontaneous behavior rather tha plunging at once into the more extreme effort at experiment control. The first and biggest difficulty encountered in exper mental anpsi work is that of avoiding and breaking up sid habits or position habits to which the animal quickly becom accustomed. If it were not for this, the animal would mere be given a choice of two ways to turn to find his master, sit ated in one or two locations beyond sensory range. As it i normally the animal quickly acquires a direction preferen and continues to follow it. Future research may discov some way of keeping the animal in a state of sufficient unce tainty to prevent these habits from forming, but thus far th methods suggested for doing this defeat the general purpo of the experiment as well. May there not be a certain type treatment or a certain condition of the animal by means which each test will be made to involve a fresh decision, an the operation of ESP thus facilitated? This is a problem human subjects, too, but it might be that another species animal could better be used to solve it.

Frankly, these suggestions for next steps in anpsi researc are not made with the expectation that they will lead to a immediate test program, although that may occur. Rathe they are presented partly to justify the continuation of effor in extending and studying the collection of spontaneous ca material.

Another value from these case studies comes from the su gestions they give us as to the possible nature of psi. If the animal cases occur as reported, psi would seem to be i volved with much greater magnitude and consistency than is even in the spontaneous experiences of humans. The re

ity of psi capacity necessary to guide an animal such as
r in making the countless daily decisions necessary in a
0-mile trip would be of an order so great as to suggest
that some qualitative difference in ability might be in-
ed.

xperimental research on the anpsi question is difficult and
in yielding results, and the special training required of
experimenter is exacting. Hence, there is a great need to
gthen the probable case for anpsi as much as can be
from the more easily handled anecdotal material and to
as much as possible from the selected material about
best and most vulnerable points of approach. In short, ap-
imating the perfect case and multiplying the number may
a certain propulsion to the investigator who is already
disposed to exploit this seemingly great invitation to a
on of the science of parapsychology.

REFERENCES

Bechterev, W. " 'Direct Influence' of a Person upon the Behavior of Animals." *Journal of Parapsychology*, 1949, Vol. 13, 166-176.

Osis, K. "A Test of the Occurrence of a Psi Effect Between Man and the Cat." *Journal of Parapsychology*, Vol. 16, 1952, 233-256.

Osis, K., and Foster, E. B. "A Test of ESP in Cats." *Journal of Parapsychology*, Vol. 17, 1953, 168-186.

Pratt, J. G. "The Homing Problem in Pigeons." *Journal of Parapsychology*, Vol. 17, 1953, 34-60.

Rhine, J. B. "The Present Outlook on the Question of Psi in Animals." *Journal of Parapsychology*, Vol. 15, 1951, 230-251.

Rhine, J. B., and Rhine, L. E. "An Investigation of a 'Mind-Reading' Horse." *Journal of Parapsychology*, Vol. 16, 1952, 233-256.

Wood, G. H., and Cadoret, R. J. "Tests of Clairvoyance in a Man-Dog Relationship." *Journal of Parapsychology*, Vol. 22, 1958, 29-39.

Trapman, A. H. *Man's Best Friend*. New York: The Macauley Co., 1928.

THE HOMING PROBLEM IN PIGEONS

J. Gaither Pratt

Except for wartime service with the U.S. Navy, Dr. Pr has devoted his entire career to parapsychological studi about two thirds of his work in research and writing was p formed at the Parapsychology Laboratory, Duke Universi while more recently, until his retirement in 1976, he was the staff of the Division of Parapsychology, Departme of Psychiatry, University of Virginia. Dr. J. G. Pratt h been identified with varied aspects of the theory and pract of parapsychology; however, among his pioneer work, homing problem in pigeons would seem to have been uniq As he notes, "this problem is still receiving a lot of attenti today, and the solution is still unknown." Looking back the tests reported in this paper, which originally appeared the Journal of Parapsychology, *March, 1953, Dr. Pratt co ments: "No definitive answer is likely to be found until som one tests pigeon homing over the ocean, with birds housed a loft aboard a ship and tested completely out of sight land." Gaither Pratt is the author of* Parapsychology: An sider's View of ESP, ESP Research Today, *and is co-auth of* The Psychic Realm.

How do birds guide their flight when migrating over tances of thousands of miles? How are they able to ret home when taken hundreds of miles into strange territo These questions have puzzled observers for centuries. Th has been no lack of speculation about the answers, but m of the suggestions have been sheer guesses, unsupported the kind of careful analysis and observation that would them the status of serious scientific hypotheses.

Recently, however, there have been growing indicati

scientists have finally accepted the challenge presented by
unexplained facts of bird orientation. There is a rising
e of research interest in the problem. These investigations
continued long enough to show that the interest is a per-
nt one, and their present scope justifies the hope that
ntists have at last claimed a problem that heretofore has
largely left to pigeon fanciers, nature lovers, and poets.

this research, the most promising work has been in
ies of homing, as opposed to the migratory flights of wild
s. Homing refers to the ability of certain species of ani-
s to find their way back to the nest or familiar surround-
after they have been taken away and released in strange
itory. No one questions the fact that many animals are
to home, though there are apparently wide differences
ng the species in regard to this ability. However, there
been widely divergent opinions on how homing per-
ances are to be interpreted. One school of thought has
that the facts do not present a really deep scientific mys-
. Another group has assumed that there is a real problem
oming but that the solution must surely lie in undiscov-
sensory functions of the animals. The question becomes
for parapsychology only if all efforts to find an explana-
in terms of recognized physical principles should appear
how that no single sense or combination of sensory abili-
can explain the facts. From the parapsychological point
iew, the problem is whether homing may in some in-
ces involve the use of psi capacities comparable to the
ability which has been established in man.

is not my purpose to present a general discussion of the
ing problem, but rather to review it in the light of recent
riments with homing pigeons. Professor Thorpe of Cam-
ge University appraised the situation in 1949, before the
riments to be reviewed were performed, as follows: “It
ns probable then that all pigeon results are explicable on
basis of good vision, quick learning of landmarks and
d and efficient methods of good exploration.”[13] This state-
t, even though only tentative, reflects a high degree of
idence that the outlines of the explanation of pigeon
ing were already apparent. The solution of the problem,
her words, did not then seem to him to depend upon the
very of any new basis of orientation but only required
er study of how the pigeons used recognized abilities in
ng their way. Since that time, there have been some sur-
ng developments regarding the problem of pigeon hom-

ing as a result of the work of Matthews[10] at Cambridg
University; of Kramer and von St. Paul[9] and, again, c
Kramer[8] at the Max-Planck-Institut in Wilhelmshaven; an
of Hitchcock[6] at Middlebury College. The work of these i
vestigators, instead of advancing our understanding of pigeo
homing in terms of the principles mentioned by Thorpe, ha
shown that this behavior will have to be explained in quit
other terms.* And it is far from apparent at the present tim
what the explanation may be.

In the present paper I propose to review the bearing of th
recent experimental findings upon hypotheses of pigeon hom
ing. A part of this objective will be to ask whether, in th
light of the present facts, the explanation may lie in some re
vision or combination of the recognized hypotheses or i
some sensory hypothesis that has not yet been considered. F
nally, I want to discuss the extent to which the present situa
tion justifies consideration of the ESP hypothesis as possibl
applying to pigeon homing.

General Results of Recent Pigeon Homing Studies

The basic experimental plan followed in the recent pigeo
homing studies is quite simple. It springs from a recognitio
of the fact that homing represents a complex act consisting o
different phases or aspects and that each of these may presen
quite distinct problems of behavior. Professor Thorpe iden
tified these phases as: (1) the initial choice of the hom
direction; (2) holding to this course throughout the journey
(3) recognition of home territory and of the loft at the en
of the journey. Like Professor Thorpe, I will comment o
these in reverse order, as the first one is the one upon whic
the real crux of the homing problem is centered.

The third or final stage of homing, the recognition of hom
territory and the loft itself, does not seem to present an
special problem. These features would be familiar from nu

---

* The extent to which the recent work has shifted the focus c
the homing problem is illustrated by two review articles by Griffin
In an extensive survey of the evidence in 1944[4] he took essentiall
the same position as that of Professor Thorpe, stated above; bu
in another review article in 1952[5] he recognizes that homin
orientation at a distance in untrained animals is a fact, but on
that has not yet been explained.

ous exercise flights, and the facts as they now appear sug- the normal use of vision.

n regard to the second phase, recent studies of bird and ct orientation[8,14,15] indicate that many organisms can ntain a definite line of orientation with reference to the tion of the sun in the sky, or even by means of a pattern olarization of light in the blue sky. A simple "sun angle" othesis seems adequate to explain how a pigeon can fly on ven course once it has chosen a direction of flight. We do know, of course, that this is the explanation of the way in ch the pigeon guides its flight, but the plausibility of the angle hypothesis makes the problem of this second phase homing behavior seem relatively less urgent than that of the choice of the homeward direction is made in the first e.

great advance in clarification of the problem was ieved in the recent experimental studies of pigeon homing the recognition of the fact that the crux of the matter this initial choice of the homeward direction. A corre- nding advance in methodology was the discovery that the al flight orientation could be studied effectively by observ- the bird with field glasses from the point of release and ording its behavior until it vanished from sight a mile or away. Critical data on the first phase of homing could be recorded within a few seconds or minutes following release.

Matthews Experiments

Matthews took the lead in directing experimental attention he first phase of pigeon homing, and he was the first to w by means of observation at the release point that pi- ns can turn toward home in strange territory from any ction.

le based his experimental procedure upon the training hods traditionally used by pigeon racers. He worked with ng birds of three to five months of age. They were first oughly settled in a loft and allowed to become familiar the surroundings through numerous exercise flights in immediate neighborhood of home. These birds were then n homing experience at increasing distances in one direc- only, from the north. Releases along this line were con- ed until the birds had homed twice from a distance of to 125 miles.

Critical tests of homing ability were then introduced wit out any interruption in the schedule of releases. The pigeo were taken in lightproof boxes and inside a closed van truc (as they had also been transported in the tests along th training line) 80 miles west of the loft. There the birds we released one at a time and observed until they were out sight. They showed an unmistakable tendency to fly towa the east in the direction of home instead of south, as they ha been trained. In the next test the birds were released to th south, a distance of 90 miles. Again most of them fle toward home, opposite to the direction of training.

Matthews conducted tests like these in 1949 and repeate them in 1950 with the same results: after preliminary trai ing along one line his pigeons were able to turn toward hom in a new direction.

The Experiments of Kramer and von St. Paul (1951)

Dr. Kramer and his collaborators, like Dr. Matthew recognized that the basic problem of pigeon homing is cen tered in the choice of the home direction, and they also relie chiefly upon observations from the release point. In one im portant respect, however, their work represented a distinct a vance. Kramer and von St. Paul tested the homing ability pigeons that had not previously received any direction trai ing. They took birds with a minimum of homing experienc (four to seven releases in different directions within 10 mile of the loft) and gave them test releases at a distance of 20 miles. Kramer himself expected only to find evidence of hom ing ability under these conditions from statistical tests applie to a vague homeward tendency, chiefly to be recognized fro reports of where the birds were found. Nevertheless, he an von St. Paul in 1951 carried out an experiment along thes lines. Special steps were taken during the three weeks preced ing the test release to increase the homing motivation.

The pigeons of Kramer and von St. Paul, like those o Matthews, showed an unmistakable preference for the hom direction at the release point. (Whereas Matthews had mad single releases, Kramer and von St. Paul released groups o four to eight birds.) There was one striking difference in th departure flights: Matthews's pigeons circled and flew an ir regular course before they finally went out of sight. Krame and von St. Paul found, however, that their birds took raight line of flight which usually deviated only slightly om the home direction. (Releases under an overcast sky in th experiments formed an exception that will be discussed er.) The reason for this difference in departure flights is t yet clear, but it may be relevant that the investigators in ermany used older, mated pigeons (most of them at least e year of age) and the flight groups contained birds of ly one sex.

The Kramer and von St. Paul birds also showed up surprisgly well in reaching home. Of 27 birds with no previous exrience with distance flights, 14 were back at the loft on the y of release, and others came in the following day. Only ree out of these 27 birds with no previous releases beyond miles were lost on the 200-mile flight.

ramer's 1952 Experiment

This is mentioned in the present connection simply to take te of the fact that homing tests were made this year with e same basic procedure as in 1951 and with the same cleart evidence of choice of home direction and excellence of ming performance. This experiment is chiefly important for bearing on the sun navigation hypothesis and it will be scribed more fully when it is considered in this connection er in the review.

he Experiments of Hitchcock

Hitchcock followed flocks of pigeons by airplane. The pions were released in groups from the ground after the ane was in the air. The initial flights generally showed cirng. The flight paths were charted as far as the birds could kept in view. The birds showed a tendency to move in the neral direction of the loft, but the flocks rarely took a ect line toward home. Nevertheless Hitchcock concluded, e Matthews and Kramer and von St. Paul, that pigeons ow an appreciation of the homeward direction in strange ritory.

On the Nature of Homing Ability

How is this homing ability to be explained? The recent exriments also produced important evidence pertaining to this question. This consists of results that bear upon different hypotheses of homing ability. These hypotheses and their status in the light of the new findings will now be considered.

The research on pigeon homing is at a point of transition. The experimental facts that are now available indicate beyond question that the term "homing" includes a class of behavior which presents a sharply challenging scientific problem. As yet, however, no one hypothesis has emerged as the explanation or even as the one most likely to be experimentally established. Under the circumstances, there is a real danger that the correct hypothesis might be overlooked while each investigator pursues his own preferred line of experimental attack. Until it is known what the solution *is*, there is reason for caution in saying what it is *not*. It is worth while, therefore, to review all of the hypotheses that have received serious scientific consideration and to measure each one against the present facts.

The Hypothesis of Random Searching for Familiar Landmarks

30787 23571

This hypothesis implies that no true homing ability exists As indicated previously, it was advanced with considerable confidence only a short time ago as an adequate explanation of all pigeon behavior. Since then it has been shown that pigeons may choose the homeward direction at the release point.

Clearly, this fact is directly opposed to the hypothesis of random searching. The only question that needs to be raised therefore, is whether enough independent observations have been made to exclude accident as the basis of homing. Were the critical releases unquestionably made in strange territory for the pigeons, or beyond the range of vision of familia landmarks? In Matthews's work, we may recall, the critica tests were made 80 miles west and 90 miles south of the loft but only after the birds had been released repeatedly at increasing distances to the north. Could the birds have flown indirect courses from these earlier releases or have overflown the loft and thus have become familiar with the critical release points? Matthews excludes this possibility on a logica basis by showing that the birds which reached home mor promptly on all previous releases were more accurate in turning toward home in the critical releases. The birds were con ently fast or slow homers throughout the tests; therefore, erior homing by some pigeons in the critical tests could be interpreted as showing that those birds had taken ugh time in the early stages of the experiment to explore English countryside.

he results of Kramer and von St. Paul exclude in a still re definite way the use of familiar landmarks at the release ats. Pigeons, a nonmigratory species, do not fly more than ew miles from home while exercising about the loft; at st they become familiar with territory within a radius of miles and they may be supposed to be able to distinguish dmarks in relatively flat country not more than 25 miles. erefore, the use of birds in test releases at a distance of miles the first time they were transported beyond 10 es clearly eliminates recognition of landmarks as a factor orientation.

Under this general heading may be included the possibility t departure flights tend to be *directed* at the release point, without the loft as an orienting factor. The observed ht behavior, in other words, might not be random for ely local reasons, and it is therefore necessary to ascertain ether any apparent relation between oriented departures the home direction exceeds the limits of reasonable coin-ence.

is conceivable, for example, that if the birds flew high ugh they might get an impression of the general topogra- of a large area. They might, for example, detect general tures of the terrain which would indicate the direction of a stal plain in which the loft was situated. It may be in-ed from the behavior of Kramer's birds that they were using this method. Most of the releases were made from top of a castle tower in Gleiberg. This is in hilly country. he 1952 experiments the birds were not permitted to see landscape before they were released. Yet they showed nite flight orientation within 10 seconds after their release. ing this brief time they were mostly flying downward n the top of the tower to pick up speed. The hypothesis of ending upon a far-ranging visual survey would require they gain altitude before choosing a homeward direction. neward orientation was also clearly evident in releases de on the island of Fehmarn, 135 miles northeast of Wil-nshaven. From that point any far-ranging survey would e revealed only the uniform, sea-level horizon. In this instance it is difficult to imagine that any distant topographical features might have revealed the general home direction.

Still another possibility is that strictly local topographical characteristics at the release point may tend to make the departure flights favor one direction. This may take place on some basis that is quite unrelated, psychologically, to the home direction. That is to say, the pigeons may be responding to local features in their own right, and not because they are mistaken for something similar back at the loft. Or a tendency for departure flights to favor one direction may be the result of the fact that something in the locality, such as a group of buildings or a prominent grove, is mistaken for similar landmarks near the loft. Both Matthews and Kramer recognize this general possibility, and Kramer argues that it is disproved by his 1952 results. Among the releases made from Gleiberg at that time, only those that occurred while the sun was visible showed immediate flight orientation which favored the home direction. The others were made with an overcast sky that blotted out the sun but without limiting visibility. These flocks flew in circles and showed much less accurately directed departures. (Matthews reported a similar contrast in observations with clear and overcast skies.) Kramer argues that this difference in behavior occurred without any difference in local topography and therefore the definitely oriented flights when the sun was visible cannot be ascribed to unidentified geographical features. This line of reasoning seems to me to overlook the possibility that overcast skies may have an inhibiting effect upon the flight activity of pigeons. How would their initial flights compare under the two conditions, clear skies and heavy clouds, in territory with which the birds are clearly familiar? If any difference is found between these two conditions, it would suggest that terrain is not the only factor that affects flight even when it would be expected to be the predominating factor.

An adequate test of homing ability becomes more difficult if it is granted that pigeons may tend to depart in a given direction from any particular release point because of local topographical features which the human observer has not identified or which he may not even be able to recognize. The obvious answer to this point is to use a large number of distinct release points that have been selected on an appropriate basis. If each locality favors flight in one direction, the departures should be randomly distributed for a group of points. Therefore consistent choice of the loft direction regardless of elease point would indicate that home, and not the local in, was the basis of the behavior.

s the number of distinct release points used heretofore sufficient for this purpose? Kramer has used only two ons for releases, and Matthews indicates five places which he made releases off the training line. (Hitch-s report is not sufficiently clear regarding the initial s and also regarding the previous experience of the birds ar decisively on this question.) Four of Matthews's criti-elease points were clustered within a radius of approx-ly 20 miles at a distance of 40 to 80 miles west of the If each of the release locations used thus far is assumed geographically distinctive the recent investigations have ded only seven independent geographical observations. "observation" is the average effect of all the flights ob-d from a given place.) As far as can be judged from the ts (that of Matthews does not give the detailed results ach test release point), each location showed a clear fa-g of the home direction in the departure flights. The bility that seven randomly selected release points would ve topographical features that would direct the initial of pigeons toward "home" (that is, not more than 90° left or right of the home line) is $(\frac{1}{2})^7$ or one time in ests of this scope.

s result is sufficient to exclude local topography as the nation if the release points were selected on a suffi-y random or objective basis. The information regarding hey were selected is not reported fully. Undoubtedly, oices were made to facilitate observing the flights of the ns, but nothing is said about whether the positions had obstructions in the homeward direction than in oth-ow the nearest city was situated, and the like. Choosing lease point on a subjective basis might tend to favor lo-opographical features that produce directed flights d home. Until more is known about the factors influ-g flights, it would be desirable to use a larger number of e points and to determine the order of using them on a m basis.

re is some justification for reserving judgment until the work has been confirmed. Unlikely as it seems, it is onceivable that at the seven places used the departure were only "accidentally" pointed toward the loft. After rds were beyond the range of local influences, they may ontinued in the direction first taken. If this position ap-

pears to be too conservative by usual scientific standards,
may nevertheless be appropriate for findings as unexpecte
and potentially of such revolutionary significance, as these p
geon homing results.

The Kinesthetic Hypothesis

This topic includes any explanation based on the fact th
all homing tests start at the loft. The hypothesis states th
orientation toward the loft is continuous throughout the e
forced outward journey and until the animal regains home
its return flight. It is commonly assumed that the sense org
primarily involved in maintaining orientation is the system
semicircular canals of the inner ear. To make this hypothes
seem more plausible, the suggestion has frequently been ma
that this set of organs could register not only the organism
changes of momentum but also the coriolis force resulti
from the rotation of the earth, and that the latter mig
provide a basis for holding to a chosen line of flight. The po
sible role of coriolis force has been most recently discuss
by Beecher,[2] but the most thorough consideration of the th
oretical possibilities for such a hypothesis has been given
Ising.[7]

As long as homing tests involve first transporting the bir
there is no way in which the kinesthetic hypothesis can
eliminated in an absolute sense. (Perhaps there is the impra
ticable method of sending the bird on a great circle journ
around the earth to be released at a distance of, say, 2
miles from home.) The hypothesis has been attacked expe
mentally, however, by subjecting some of the birds during t
outward journey to conditions which would make the ma
tenance of orientation incomparably more difficult for th
than for the other birds. One group, for example, would
transported under conditions that kept their cage in contin
ous rotation with changing speed during the outward journe
Their homing performance would then be compared w
birds that were carried in the usual straightforward manner.

Matthews conducted experiments of this kind on some
his releases. He was not the first to use this principle, but
applied it to a larger number of birds than earlier investi
tors had used, and he was the first to pay particular attenti
to the departure directions. He found no difference in
ability of birds in the two groups to turn toward home.

Matthews's results, taken together with the similar ones r investigators, appear to rule out the kinesthetic hypothe- The only alternative seems to be one of claiming that the thetic impressions work in an absolute or infallible man- Probably no one is prepared to go this far. This sup- d basis of homing has been so weakened by the rimental facts that it is no longer of primary concern. It again become important only if further research should ce every other conceivable hypothesis to a level of equal wer plausibility.

Hypothesis of Homing by a "Magnetic" Sense

e idea that pigeons may home by means of some sensi- to the earth's magnetic or electrical field was first ad- ed as a purely speculative hypothesis with little or no al or logical justification. This suggestion achieved a tific status when it was incorporated in a hypothesis by ley and made the basis of an extensive investigation of ng.[16] Yeagley's hypothesis assumed that the pigeon s by means of sensitivity to two kinds of force detected g its flight: (1) the coriolis force already mentioned, (2) an effect based on movement through the earth's etic field. Only the vertical component is thought to play t. The strength of the magnetic field that might be in- d can be calculated on a theoretical basis. As each of hypothetical forces, coriolis and magnetic, was indispen- to the hypothesis, Yeagley conceived the idea of testing eory by attaching magnets to the birds' wings as a con- n this aspect. Magnets were used that would produce a etic field many times as strong as the bird might experi- due to its flight alone. The logic of the experiment was the strong and vacillating magnetic field generated ex- entally by the motion of the wings would obscure the hypothetical effect which was supposed to play an es- l role in homing. If birds with magnets failed to home others carrying neutral weights were successful, the hy- sis would gain support; if both groups homed equally the evidence would be against it.

agley's own experiments with magnets and weights were uous, chiefly because they were conducted on such a scale. Several investigators have since carried out simi- sts and the results have shown that the magnets have no Again. Matthews has done the most conclusive work these lines. He has found no difference of any importance whatsoever between his birds with magnets and thos with control weights.

In the light of these tests the "magnetic" hypothesis homing is in the same situation today as that stated for th kinesthetic hypothesis: the earth's magnetic field is not likely factor in homing. Further tests of this hypothesis woul appear to serve no useful purpose, at least not until othe possible explanations of homing have been more thoroughl explored.

The Sun Navigation Hypothesis

Matthews, having in the course of his investigations of p geon homing largely disproved the existing hypothese proceeded to propose a new explanation within a senso framework. Kramer and his collaborators had already repor ed work showing that the position of the sun may be a fact in bird orientation in a particular compass direction. Ma thews extended this principle another step and offered the hy pothesis that birds might determine the location of ar release point in relation to home from observations of th sun.

This hypothesis requires the assumption of many comple abilities in the pigeon. They must have a substitute for th human navigator's chronometer and navigational tables. The must be able to estimate sun angles within the general degr of accuracy achieved by means of the sextant. Finally, th must perform the equivalent of mathematical calculations correlating the sun's data at the release point with those the loft as known from, say, the preceding day.

The human navigator with his instruments and other ai (not including a compass) fixes his position by observing t sun at two different times, preferably separated by as mu as 30 minutes or an hour. The pigeons' achievement represented by this hypothesis would be ever so much mo remarkable. The bird is supposed to see the relative change the sun's position between the moment of release and t short time afterward—measured in seconds or a very fe minutes—when the homeward orientation is evident. This i terval of time in Matthews's experiment generally varied fro two to ten minutes. During this interval the bird was on t wing in circling flight. The pigeon, therefore, had no course, fixed point of reference, or constant horizon (pecially in hilly country) from which to estimate the essent

acteristics of the sun's height and curve of apparent mo-
The difficulties the pigeon would encounter in making
observations as this hypothesis requires would be greater
e low altitude at which it usually flies (often just above
reetops and seldom above 300 feet) than at higher levels.
e is clearly a great difference between the abilities as-
d to be operating in the pigeon under these circum-
es and those used by the human navigator with the aid
s instruments, and it is only the absence of any other
eivable sensory explanation of homing that would justify
us scientific consideration of the sun navigation hypothe-

atthews's experiments produced one result that offered at
suggestive evidence against his hypothesis, though he
not discuss the finding in relation to this point. He ob-
d that those birds that took the shortest time to disap-
from sight (1½ to 3½ minutes) vanished on the average
r to the home direction. Thus his own data produced ev-
e that the quickest orientation was the best. This fact
s to be opposed to the sun navigation hypothesis for the
wing reason: it is essential, according to this hypothesis,
enough time should elapse for the bird to observe the
ve motion of the sun, and the longer this time, the easier
more accurate the inferences regarding the home direc-
should be. We might expect, therefore, that accuracy of
nent would be directly related to the amount of time
for making and checking observations of the sun, in-
of the opposite, as Dr. Matthews found in his pigeons.
Kramer has pointed out the alternative interpretation that
uickest departures may have been made by the birds
were most gifted in sun navigation. This consideration is
portant one, and it keeps this evidence against sun navi-
n from being conclusive. Two comments on Dr.
er's qualification are: (1) Some minimum time interval
the sun is visible to the bird is necessary before the
data for sun navigation would be available; (2) the best
ations were shown by birds that were lost from sight at
1½ miles in 1½ to 3½ minutes, so they must have
homeward orientation from the start of their flights
thin a few seconds after they were taken from the dark
.

amer and von St. Paul carried out their investigation of
ng in untrained pigeons with a favorable attitude toward
un navigation hypothesis. Their tests in 1951 were based

upon only eight groups of pigeons. Four of these consisted c pigeons that had homed 80 miles from the south the preceding year, and four, of birds that had received only 10-mil nondirectional flights about the loft. These were not enoug groups for controlled tests of the sun navigation hypothesi Accordingly, a plan was followed which allowed the bird full opportunity to make use of this hypothetical basis c homing. The birds were transported in open cages on th floor of a bus in such a way that they could see the sk throughout the journey, but not the landscape. At the releas point the birds were placed on top of the tower in the sam open cages and were left there throughout a full day, durin which they could observe the sun.

Each group was released separately on the forenoon of th second day and every flight turned immediately toward hom without any circling or hesitation. The cages were opene facing in different directions, and the course the birds too toward the north was so definite and so immediately eviden as to suggest that the birds were already oriented before the left the cages. The main object of the experiment was to fin out whether, under the most favorable conditions that coul be provided, homing behavior could be obtained withou direction training. The research was definitely successful i achieving this primary objective. The investigation was no planned to provide a crucial test of the sun navigation hypothesis; rather, it was assumed throughout that this migh apply. The homing results were therefore consistent with th view but did not provide any direct evidence in support of i

Kramer carried out further experiments in 1952 with much larger number of flight groups and with a brilliantl designed procedure for testing whether the height of the su is a factor in homeward orientation. A few of his group were composed of pigeons that had been released at the sam place (Gleiberg) in 1951, but most of the groups were mad up of birds that had received only as many as five releases i different directions up to 10 miles about the loft. Each grou was released and allowed to fly out of sight while the other were under cover, and most of the flight groups were still intact and separate when they reached home. There was n possibility that the experienced birds set the example for th inexperienced one at the release point, and very little likel hood that the new ones were guided on any part of th homeward journey. All of the conclusions reached in his ex ment may be based solely upon the results of the new s.

he birds for these releases were transported in a closed k with ventilation holes which admitted only indirect . Inside lights were burning brightly enough to conceal moments of sunrise and sunset.

he groups were separated into two classes that were sub- d to different light conditions between the moment of hing the destination and the time when the birds were ac- y released. The "light" groups were taken from the sport truck in the dead of night and were placed on top he tower in open cages, as the 1951 birds had been. The k" groups were taken in shielded cages in the middle of night into the tower. Each of these flight groups was kept de the tower, carefully protected from either direct or in- ct daylight, until 30 seconds before it was to be released. cial care was taken to prevent any outside light reaching pigeons of the "dark" groups at the hours of sunrise or et, as the length of the day in the month of June might, rding to the sun navigation hypothesis, provide a clue to birds that they had been displaced toward the south.

t the appointed time for releasing one of the light groups, cage was placed in position and the side wall of the cage removed. (All other groups that were on the tower at the of a release were prevented from seeing the departure t.) As the moment for releasing a dark group ap- ched, the cage was brought into position inside a proof screen by an assistant. On a given signal he moved to the open and placed it on the platform of the tower a period of 30 seconds to allow the pigeons to become ac- omed to the light. Then the side wall of the cage was re- ed to release the birds in the same manner as with the t groups.

oth kinds of groups turned immediately toward Wil- nshaven and went out of sight in the chosen direction. courses deviated somewhat from the home direction, but a surprisingly small angle in all except one or two in- ces, and even in those cases by less than 90°. There was circling and very little deviation of the flights from a ght line course.

ome groups from each of the two classes as distinguished ight conditions were released at or quite near the time of forenoon when the sun at Gleiberg was the same height ve the horizon as it was at the same time at Wilhelmshaven. Other groups drawn from both light condition were released at an earlier or later time of the forenoon when the sun at Gleiberg was either lower or higher than a observer would have seen it at Wilhelmshaven. If the heigh of the sun was a factor in the orientation direction shown b the pigeons, they should have departed from Gleiberg at thes three different times of day in directions showing clearly predictable errors of flight. No difference among the three release times was observed, and the conclusion from thes results was that the height of the sun, within the limits involved in these releases, was not a factor in flight orientation It should be noted that the differences in sun heights a Gleiberg and Wilhelmshaven at the earliest and latest releas times were as great as one could ordinarily find for release at a distance of 200 miles. Certainly if it was reasonable fo Matthews to suppose that his birds might be responding t differences in the sun's position at 80 miles, Kramer's pigeon had a much better opportunity to make inferences regardin the home direction on this basis.

What may be said about the sun navigation hypothesis o the basis of these experimental results? Dr. Kramer says tha he sees no opportunity of maintaining this hypothesis as formulated by Dr. Matthews unless it is assumed that the pigeo can carry out the complicated observations and calculation of the sun's position and relative movement in a period of 4 seconds. (This period covered the 30 seconds for light adaptation of the dark groups and 10 seconds after the release, b which time the homeward orientation of the birds in fligh was already clearly apparent.) Furthermore, to save the su hypothesis, it is necessary to suppose that the complicate judgment can be made just as well in 40 seconds as in much longer time, even more than a day. There is logicall no more justification for clinging to the sun navigation hypothesis in the face of these results than there is for holdin on to the kinesthetic and magnetic hypotheses.

If there is any need to qualify this statement, it would b on the ground of the *amount* of evidence against the sun navigation hypothesis rather than its quality. Kramer's method o working with virtually untrained pigeons represents a distinc advance in experimental methods. In fact, he and von S Paul make it quite clear that they did not expect their bird to show such a clear-cut homing ability under these conditions. Both Matthews and Hitchcock have in correspondenc with the writer expressed surprise and some skepticism at th ellent homing results obtained. There is therefore a need repetition of these experiments by other investigators. If can be done, it will serve two main purposes. First, it confirm the finding that pigeons have a highly developed ing ability, and secondly, if Kramer's results from his parison of the light and dark birds (as well as those of ests of the sun's height) can be repeated, it will give fur- scientific assurance that the sun is not the key to the ice of the home direction. This is worth while because the navigation hypothesis, although only recently advanced, within a short time been given strong emphasis and wide ulation. Matthews put it forward almost as the only re- ining sensory basis for homing. If, as now seems to be the e, this suggestion is wrong, it should be completely ex- ded experimentally before the error gets rooted in.

here seems to be no reason to doubt that Kramer's basic ings will be confirmed. He naturally had faith in his own ilts, and on the basis of them offers some tentative conclu- ns about the homing ability of pigeons. He is unwilling for time being to credit the birds with the very special abili- that would enable them to fix their position by observing sun for 40 seconds. There must be some other way.

ramer suggests that pigeons have some way of knowing re they are which is independent of the sun. This is the s of the first stage of homing. The second stage, which be- from the moment the homeward orientation first appears continues as long as the birds are over strange territory, he period during which the bird is flying in the direction is consistent with the impression formed in the first stage. mer suggests that the sun is a factor in the second stage, oth Matthews and he observed that flights under overcast s with the sun not visible involved circling and wide devi- ns from the home direction. The known facts are consist- with the view that pigeons keep on a chosen course by erving the position of the sun in azimuth and interpreting propriately for the time of day.

heoretically, Kramer recognizes that when the sun is not le the first stage of homing may continue all during the the bird is in flight. In other words, by means of this un- wn method of orientation the pigeon may repeatedly w and correct its impressions of the direction of the loft. circling, inaccurate flights observed under heavy clouds, ever, suggest that once the definite direction is established his unknown method, the flight may proceed on a straight course when the sun is visible. The sun may serve as "skymark" by which the bird keeps its flight on the chose course. But what is the method by which this course is selec ed in the first place, and by which the impression of th home direction is, possibly, renewed and corrected from tim to time during the flight? This is the primary problem homing. It is still unsolved, and the solution is closer only the negative sense that explanations previously considere possible have now been largely excluded.

Does the Choice of the Home Direction Depend upon Sensory Stimulation?

The advanced point to which the research on the homi problem has been carried, particularly by Kramer's 19 work, represents a forward position for a new attack upo the homing problem, one from which the investigators see unlikely to be dislodged. Quite naturally and properly the a proach favored in previous research has been to seek the e planation within the realm of sensory possibilities. The n effect of this experimental work has been to establish mo clearly the existence of a true homing ability in the pige but at the same time to make it appear unlikely that any the previously suggested sensory hypotheses will adequate explain this behavior.

The first question that arises is whether homing has so sensory basis that has not yet been thought of or serious considered. The vast majority of zoologists and other inves gators of animal behavior would answer this question by sa ing: "Of course, if the present sensory hypotheses have to rejected, the answer must lie in some sensory basis that h not yet been considered." For example, Hitchcock says at t end of his recent experimental report that his results can b be described by saying that the pigeons have a "sense direction." He makes this suggestion in spite of the fact th he had already stated earlier in his article that he was n happy about hypotheses falling in this general category, a he consistently uses quotation marks about the term. T point that is significant for the question with which we a now concerned is that, in spite of the fact that he is not a to offer any suggestion regarding the nature of this ability, nevertheless concludes with the statement: "With continu

vestigation, the nature of this ‘sense’ should be reduced to
ysical dimensions.”

I believe that this is the prevailing scientific view. There
ems to be no danger, therefore, that the sensory aspects of
e problem will be neglected. But if the efforts to explain
ming entirely within this framework should continue to
il, the reason could be that the boundary lines of the inves-
ation have been arbitrarily drawn in such a way as to ex-
ude the essential principle. By all means, investigators
ould continue to look for a sensory basis of homing; but it
ould be recognized at the same time that there is no way to
fine the area within which all future scientific discoveries
ust be made, and therefore the possibility cannot be ex-
ded that homing may involve a kind of adaptation which
es not have a sensory basis.

Why Ask Whether Homing Orientation May Have an Extrasensory Basis?

To raise and attempt to answer this question is the main
rpose of this review. It has been necessary to review the
esent experimental situation fully before reaching this point
cause the question is one that can only be answered in rela-
n to the status of the sensory hypotheses about which the
search has thus far been centered.

The question, essentially, is whether the research on the
ming problem should not be broadened to include the pos-
ility that this animal orientation has some energetic basis
at transcends sensory functioning, that it depends upon es-
ntially the same kind of abilities as those that parapsycholo-
sts have been investigating for many years in humans. I am
t implying that further research will definitely prove that
P is the basis of homing. But is the likelihood it may do so
ong enough on the basis of the present facts to justify un-
rtaking a program of research planned with this hypothesis
ecifically in mind? And if it should turn out that ESP is the
swer, how would the resulting advance in knowledge in the
ea of the problems with which parapsychology is concerned
mpare with what might be accomplished by an equal effort
some other direction? The answers can be indicated quite
efly.

1. There is at the present time no sensory hypothesis o homing that has not already been seriously called into question by the facts as they are now known.

2. ESP has been established in humans, and this evidenc provides a proper scientific basis for asking whether the sam factor may be detected in animals, particularly in connectio with behavior which suggests the operation of psi. For a comprehensive review of animal behavior which seems to be relevant to the question of psi in animals, see Rhine.[12]

3. None of the research on pigeon homing done heretofor has produced evidence against the ESP hypothesis, and to th extent that the experiments have made a sensory basis of thi behavior appear less likely, they have indirectly made the ps explanation more plausible.

4. If ESP is the basis of pigeon homing, it is operating at level of efficiency and control that has rarely been approached in human subjects. On the one hand, this contras might suggest that what the birds are demonstrating is an altogether different kind of function and therefore it is no likely to be extrasensory. But on the other hand it is not unreasonable to suppose that the psi factor may not have bee limited in development (or repressed) by the process of evolution in all the lower species to the extent that it has been i man. It is conceivable that some species, such as birds an fish, whose means of locomotion is too highly developed to b at all times adequately directed by the senses may have retained the psi function as a means of orientation toward distant goals in their evolutionary development or even had i strengthened. If this should be found to be the case, the discovery would have a revolutionary effect upon present-day biological theories. Also, parapsychology would have discovere an area of life in which its principles are much more readil available for investigation, and further research with pigeon and other species with outstanding homing ability might wel have important bearings upon fundamental problems of human nature.

5. In my opinion, research on the question whether ESP i involved in the homing of pigeons should begin at the poin that has now been reached by past investigations in this field Insofar as possible, the work should be done in close cooperation with the zoologists who are approaching the problem from the sensory side. The aim of all the investigators shoul be—and must be if the research is to be truly scientific—to discover the facts as quickly as possible. This can be done

if every active experimenter is ready and eager to root he erroneous hypotheses.

Merely disproving every conceivable sensory hypothesis, ever, will not be sufficient to establish the ESP basis of ing. Before this conclusion will be justified, it will be ssary to identify the ESP basis of this behavior and to onstrate it experimentally in terms of its positive charac- tics and consequences.

me suggestions regarding a research program for testing ESP hypothesis of homing may be offered, though they t necessarily be tentative at this stage. What is required, fect, is an ESP test of pigeon homing. One thinks first of progress that has been made toward developing methods esting ESP in other species: the work of Bechterev with [1] and the recent investigations of Osis dealing with a psi ionship between man and the cat.[11]

ncouraged by these examples, the pigeon investigator may empted to think that all he needs to do to find out her this species has ESP ability is to design a suitable iple-choice situation with sufficiently strong motivation adequate controls against sensory cues. This might, how- represent a big psychological change for the pigeon, even if ESP is involved in the usual homing situation, is no secure basis for predicting that the birds would it in a laboratory test.

erhaps a more promising experimental approach is to find uation which offers the pigeon a definite choice between possible "home" directions but under circumstances as ar to those of previous homing tests as it is possible to n. Tentatively, I have been thinking of an experiment to arried out along the following general lines. Young birds be settled in a movable loft as soon as they can be ed. This loft would be located on successive days at spots, A, B, and C, the birds being allowed to live a al life in and about the loft at a given place during one and the loft being moved during the night to one of the two locations for the following day. The three locations d be selected to form a triangle with sides of a suitable nce, probably 10 miles. Each location would be one in h the loft is shielded by a building or some other ob- tion so that it could not be seen by birds in flight at the two places. In fact, the arrangement should be such pigeons released at one of the locations could not see at

which of the other two the loft was situated until they
flown at least half the distance.

The procedure of moving the loft about among the th
locations would be continued until the birds showed signs
being fully at "home" at each place in their exercise flig
about the loft and until the birds were sufficiently mature
homing tests. They would then be accustomed to homing
leases by taking them a few times a distance of three or f
miles from the loft at each location and releasing them to
turn to it.

The final, ESP stage of the test would be reached when
birds could be taken from the loft at one location and kep
crates while the loft was moved on a random basis to one
the other two places. All necessary precautions would
taken against sensory cues, such as sounds or odors revea
where the loft had been taken. After a suitable period, so
one who had stayed behind with the pigeons would rel
them and observe the direction of their departure flights
the birds should show any tendency to start toward the
rather than dividing on a chance basis between the other
locations, the findings would provide direct evidence in s
port of the ESP hypothesis of homing and would open up
limited possibilities for further experimental study of
behavior.

Failure in the first attempt at such an experiment sh
not discourage further efforts, and especially it should no
interpreted to mean that the ESP hypothesis of homing
been disproved. It may be that what appears to the hu
observer to be an adequate test situation may not be any
at all for the pigeon. For example, the distance of ten m
may prove to be completely inadequate, as it may be a m
ter of complete indifference to the pigeon whether he ha
fly that distance or twice as far to find the loft. Of course,
search for the solution to the homing problem will end
every investigator, regardless of the point of view from wh
he has been approaching the question, as soon as the expla
tion is found. So long as the main goal has not been reac
however, the same kind of persistence and versatility may
required in testing the ESP hypothesis as has been use
seeking an explanation in sensory terms.

Appendix:

Preliminary Report on a Homing Experiment with American Pigeons

e first requirement for a program of research on the
lem of pigeon homing is to be able to obtain results com-
ble to those first reported by Kramer and von St. Paul of
ax-Planck-Institut, Wilhelmshaven, Germany. American
tigators who have been working on this problem have
stently obtained poor homing performance from their pi-
s. Indeed, until recently, many of them have doubted
pigeons have any ability not adequately explained by
tion training, random searching, and the use of land-
s.

the spring of 1952, I obtained a group of young birds
oming experiments. A shipment of 40 homing pigeons
purchased from Palmetto Pigeon Plant, Sumter, S. C.,
0 were assigned for the research by the U. S. Army Sig-
orps Pigeon Center at Fort Monmouth, N. J. The young
used in the present experiment were bred on the loca-
rom old stock provided by the Tarheel Racing Club of
ury, N. C., and by Mr. A. F. Phaup of Richmond.*

ring the summer, I began training the 80 older birds by
es at increasing distances about the loft, using the
ods that have been traditional with American pigeon
s and that have been adopted by other investigators. My
ng results were disappointing. By the time the birds were
released at a distance of 40 miles, they were showing
vidence of homeward orientation at the release point.
oximately half of them were lost in each test at this dis-
and those that returned took so long to reach home
he results were quite ambiguous.

ere was clearly some fundamental difference between
ethods, as well as those of other American investigators,
he procedure followed at the Max-Planck-Institut. The
sychology Laboratory therefore invited Dr. Kramer to

---

wish to express my appreciation to those who helped me to
pigeons, as well as to the many others, too numerous to
ho gave me invaluable advice and encouragement.

come to America for a period of collaboration on the pige homing research at Duke University. Dr. Kramer accepte and he spent approximately two months in this country. visited the lofts of the Parapsychology Laboratory for o day shortly after he arrived to make as early as possible a changes needed in the manner of caring for the birds. T chief change which Dr. Kramer suggested was that the bi be given complete freedom about the loft. Prior to his vi they had been confined except when they were allowed for exercise.

He then returned after a fortnight for a month of uninte rupted collaboration. We were able to carry out a small-sc experiment modeled as closely after the Wilhelmshaven periments as the stock situation of the loft permitted. At t time, the only birds available which could be used with jeopardizing the breeding program and plans for fut research were young birds (3-5 months). There was no ba for predicting that young birds would show definite hom behavior at this season of the year, but I urged that we ahead nevertheless since it was the best method for me to serve the procedure at every stage of the experiment. used 16 young birds in the experiment and one nine-mont old bird of Fort Monmouth stock.

In the preliminary accustomization stage of the experime there was time for only three releases at 10 miles in differ directions, the last one being from the north. We then t the pigeons in crates, covered with tent canvas, to a look tower (Bishopville, S. C.) 147 airline miles SSW.

The birds were released at Bishopville in six groups, first one being a single release of the nine-month hen. All parture flights except that of the youngest group were im diate and without circling. Five groups of the birds vanis from sight as observed with field glasses at approximately miles in from 1½ to 2½ minutes; the youngest group too minutes. The vanishing points were recorded in terms of degrees of the circle, with N = 0° (360°), E being 90°, All vanishing points were between 305° and 340°, inclus As the bearing of the loft was 31°, all six vanishing po were within the home half of the circle. However, there a consistency in the deviation toward the left which sugge the presence of some local factor or factors producing de tures in that sector.

The homing results exceeded our expectations. The ol bird homed in four hours. Six of the young birds arr

ne on the day of release, one by the morning of the fol-
ing day, and another by the morning of the second day
owing.

he birds carried messages requesting reports, and in-
nation was received on five of the eight birds that failed
ome. Two reached Salisbury, N. C., 100 miles from the
se point and 43° to the left of the home line. The other
e were found not more than 55 miles from the tower and
umably they were lost, though one of the short-distance
elers was found 25 miles away on the direct line toward
e. The other two went toward the west, outside the
eward half of the circle. It will be interesting to observe
the basis of reports from later experiments whether there
tendency for long-distance flyers to end up in the direc-
of home while short-distance flyers are found randomly
ributed about the release point.

he experiment, limited in scale as it was, provided the an-
rs to some questions, both practical and scientific, that are
c to further research. This preliminary report of the ex-
nent is merely for the purpose of putting the essential
of the experiment on record as showing that American
ing pigeons perform in a manner comparable with Ger-
pigeons when they are handled in the same way. The ex-
menters hope to issue a full, joint report after the results
been extended through further releases.

REFERENCES

Bechterev, W. "'Direct Influence' of a Person upon the Behavior of Animals." *J. Parapsychol.*, Vol. 13, 1949, 166-176. (Translated and condensed from *Z. Psychother-apie*, 1924.)

Beecher, W. J. "The Unexplained Direction Sense of Vertebrates." *Scientific Monthly*, Vol. 75, 1952, 19-25.

Frisch, von, K. *Bees: Their Vision, Chemical Senses, and Language*. Ithaca: Cornell University Press, 1950.

Griffin, D. R. "The Sensory Basis of Bird Navigation." *Quart. Rev. Biol.*, Vol. 19, 1944, 15-31.

———. "Bird Navigation." *Biol. Rev. Cambr. Phil. Soc.*, Vol. 27, 1952, 359-393.

Hitchcock, H. B. "Airplane Observations of Homing Pigeons." *Proc. Amer. Phil. Soc.*, Vol. 96, 1952, 270-289.

sing, G. "Die physikalische Möglichkeit eines tier-

ischen Orientierungssinnes auf Basis der Erdrotation
Ark. Mathematik. Astron. ok. Fysik., 1945, 32A, 1-23.
8. Kramer, G. "Wird die Sonnenhöhe bei der Heimkehr
rientierung verwertet?" *J. für Orn.*, 1953, 94. (In press.)
9. Kramer, G., and St. Paul, U. von. "Heimkehrleistu
gen von Brieftauben ohne Richtungsdressur." *Verhan
lungen der Deutschen Zoologischen Gesellschaft*, 195
172-178.
10. Matthews, G. V. T. "The Experimental Investigati
of Navigation in Homing Pigeons." *J. Exp. Biol.*, V
28, 1951, 508-536.
11. Osis, K. "A Test of the Occurrence of a Psi Effect B
tween Man and the Cat." *J. Parapsychol.*, Vol. 16, 195
233-256.
12. Rhine, J. B. "The Present Outlook on the Question
Psi in Animals." *J. Parapsychol.*, Vol. 15, 1951, 230-251
13. Thorpe, W. H. "Recent Biological Evidence for t
Methods of Bird Orientation." *Proc. Linnean Soc.*
London, 1947-48, Session 160, Part 2, 85-94.
14. Vowles, D. M. "Sensitivity of Ants to Polarized Light
Nature, Vol. 165. 1950, 282-283.
15. Waterman, T. H. "Polarized Light Navigation by A
thropods." *Trans. N.Y. Acad. Sci.*, Vol. 14, 1951, 11-1
16. Yeagley, H. L. "A Preliminary Study of a Physic
Basis of Bird Navigation." *J. Appl. Physics*, Vol. 1
1947, 1035-1063.

V.

SURVIVAL AFTER DEATH

PHANTASMS OF THE DEAD

Frederic W. H. Myers

s Dr. Gardner Murphy has noted, Frederic W. H. Myers
3-1901) was a central personality in the late nineteenth-
ury drive for a better understanding of "the various
hs and levels of human personality." The most influ-
l work in the combined history of psychical research
parapsychology remains Myers's Human Personality
Its Survival of Bodily Death (*London: Longmans,*
), a massive two-volume work including sections on
us, sleep, hypnotism, sensory and motor automatism,
e, possession, and ecstasy. A key section of this work
e chapter "Phantasms of the Dead," from which the fol-
ng text has been adapted.

. . A profound and central question . . . must . . . be
tly faced. From the actions and perceptions of spirits
in the flesh, and concerned with one another, we must
on to inquire into the actions of spirits no longer in the
, and into the forms of perception with which men still
e flesh respond to that unfamiliar and mysterious agency
The subliminal self, . . . must be studied as maintaining
independent existence even when the organism is
oyed. Our subject will divide itself conveniently under
main heads. *First,* it will be well to discuss briefly the
e of the evidence to man's survival of death which may
etically be obtainable, and its possible connections with
r evidence. . . . *Secondly,* . . . we need a classified ex-
ion of the main evidence to survival thus far ob-
d;—so far, that is to say, as sensory automatism—audi-
or apparition—is concerned. . . . *Thirdly,* there will be

need of some consideration of the meaning of this evidence a whole, and of its implications alike for the scientific and fo the ethical future of mankind. Much more, indeed, of discu sion (as well as of evidence) than I can furnish will be neede before this great conception can be realized or argued fro with the scientific thoroughness due to its position among fu damental cosmical laws. Considering how familiar the no tion—the vague shadowy notion—of "immortality" has alwa been, it is strange indeed that so little should have been do in these modern days to grasp or to criticize it;—so little, o might almost say, since the *Phaedo* of Plato.

Beginning, then, with the inquiry as to what kind of ev dence ought to be demanded for human survival, we are m first by the bluff statement, which is still often uttered eve by intelligent men, that *no* evidence would convince them such a fact; "neither would they be persuaded though o rose from the dead."

Extravagant as such a profession sounds, it has a meanin which we shall do well to note. These resolute antagonis mean that no new evidence can carry conviction to the unless it be *continuous* with old evidence; and that they ca not conceive that evidence to a world of spirit can possibly continuous with evidence based upon our experience of world of matter. I agree with this demand for continuity; an I agree also that the claims usually advanced for a spiritu world have not only made no attempt at continuity wi known fact, but have even ostentatiously thrown such co tinuity to the winds. The popular mind has expressly desire something startling, something outside Law and abo Nature. It has loved, if not a *Credo quia absurdum*, at least *Credo quia non probatum*. But the inevitable retribution is deep insecurity in the conviction thus attained. Unsupport by the general fabric of knowledge, the act of faith seems shrink into the background as that great fabric stands an grows.

. . . My object in these pages is of a quite opposite chara ter. Believing that all cognizable Mind is as continuous as cognizable Matter, my ideal would be to attempt for t realm of mind what the spectroscope and the law of gra tation have effected for the realm of matter, and to carry th known cosmic uniformity of substance and interaction u ward among the essences and operations of an unknow spiritual world. And in order to explore these unreachable titudes I would not ask to stand with the theologian on t

mmit of a “cloud-capt tower,” but rather on plain earth at
e measured base of a trigonometrical survey.

If we would measure such a base, the jungle must be
eared to begin with. Let us move for a while among first
efinitions; trying to make clear to ourselves what kind of
ing it is that we are endeavoring to trace or discover. In
pular parlance, we are looking out for *ghosts*. What conno-
tion, then, are we to give to the word “ghost”—a word
hich has embodied so many unfounded theories and causeless
ars? It would be more satisfactory, in the present state of
r knowledge, simply to collect facts without offering specu-
tive comment. But it seems safer to begin by briefly point-
g out the manifest errors of the traditional view; since that
adition, if left unnoticed, would remain lodged in the back-
ound even of many minds which have never really accepted

Briefly, then, the popular view regards a “ghost” as *a de-*
ased person permitted by Providence to hold communica-
n with survivors. And this short definition contains, I think,
least three unwarrantable assumptions.

In the first place, such words as *permission* and *Providence*
e simply neither more nor less applicable to this phenome-
n than to any other. We conceive that all phenomena alike
ke place in accordance with the laws of the universe, and
nsequently by permission of the Supreme Power in the uni-
rse. Undoubtedly the phenomena with which we are
aling are in this sense permitted to occur. But there is no *a*
iori reason whatever for assuming that they are permitted
any especial sense of their own, or that they form excep-
ns to law, instead of being exemplifications of law. Nor is
re any *a posteriori* reason for supposing any such infer-
ce to be deducible from a study of the phenomena them-
ves. If we attempt to find in these phenomena any poetical
tice or manifest adaptation to human cravings, we shall be
t as much disappointed as if we endeavored to find a simi-
satisfaction in the ordinary course of terrene history.

In the second place, we have no warrant for the assump-
n that the phantom seen, even though it be somehow
sed by a deceased person, *is* that deceased person, in any
inary sense of the word. Instead of appealing to the crude
logy of the living friend who, when he has walked into
room, *is* in the room, we shall find for the ghost a much
ser parallel in those hallucinatory figures or phantasms
ch living persons can sometimes project at a distance.

But experience shows that when—as with these *postmortem* phantoms—the deceased person has gone well out o sight or reach there is a tendency, so to say, to *anthropomorphose* the apparition; to suppose that, as the deceased perso is not provably anywhere else, he is probably here; and tha the apparition is bound to behave accordingly. All such assumptions must be dismissed, and the phantom must be take on its merits, as indicating merely a certain connection wit the deceased, the precise nature of that connection being part of the problem to be solved.

And in the third place, just as we must cease to say tha the phantom *is* the deceased, so also must we cease to ascrib to the phantom the motives by which we imagine that the deceased might be swayed. We must therefore exclude from ou definition of a ghost any words which assume its intention t communicate with the living. It may bear such a relation t the deceased that it can reflect or represent his presumed wis to communicate, or it may not. If, for instance, its relation t his *postmortem* life be like the relation of my dreams to m earthly life, it may represent little that is truly his, save suc vague memories and instincts as give a dim individuality t each man's trivial dreams.

Let us attempt, then, a truer definition. Instead o describing a "ghost" as a dead person permitted to communicate with the living, let us define it as a *manifestation of persistent personal energy*, or as an indication that some kind o force is being exercised after death which is in some wa connected with a person previously known on earth. In thi definition we have eliminated, as will be seen, a great mass o popular assumptions. Yet we must introduce a furthe proviso, lest our definition still seem to imply an assumptio which we have no right to make. It is theoretically possibl that this force or influence, which after a man's deat creates a phantasmal impression of him, may indicate n continuing action on his part, but may be some residue of th force or energy which he generated while yet alive. Ther may be *veridical after-images*—such as [Edmund] Gurne hints at (*Proceedings* S.P.R., Vol. V., p. 417) when in hi comments on the recurring figure of an old woman—seen o the bed where she was murdered—he remarks that this figur suggests not so much "any continuing local interest on th part of the deceased person, as the survival of a mere imag impressed, we cannot guess how, on we cannot guess wha by that person's physical organism, and perceptible at time o those endowed with some cognate form of sensitiveness."

Strange as this notion may seem, it is strongly suggested by
any of the cases of *haunting* which do not fall within our
resent scope. . . . There is strong evidence for the recur-
ence of the same hallucinatory figures in the same localities,
ut weak evidence to indicate any purpose in most of these
gures, or any connection with bygone individuals, or with
ch tragedies as are popularly supposed to start a ghost on
s career. In some of these cases of frequent, meaningless re-
urrence of a figure in a given spot, we are driven to wonder
hether it can be some deceased person's past frequentation
f that spot, rather than any fresh action of his after death,
hich has generated . . . the verdical after-image—verdical
the sense that it communicates information, previously un-
nown to the percipient, as to a former inhabitant of the
aunted locality.

Such are some of the questions which our evidence sug-
ests. And I may point out that the very fact that such bi-
arre problems should present themselves at every turn does
a certain sense tend to show that these apparitions are not
urely subjective things—do not originate merely in the per-
pient's imagination. For they are not like what any man
ould have imagined. What man's mind does tend to fancy
such topics may be seen in the endless crop of fictitious
host stories, which furnish, indeed, a curious proof of the
ersistence of preconceived notions. For they go on being
ramed according to canons of their own, and deal with a set
imaginary phenomena quite different from those which ac-
ally occur. The actual phenomena, I may add, could
arcely be made romantic. One true "ghost story" is apt to
very like another, and most of them to be fragmentary
nd apparently meaningless. Their meaning, that is to say,
es in their conformity, not to the mythopœic instinct of
ankind, which fabricates and enjoys the fictitious tales, but
some unknown law, not based on human sentiment or con-
enience at all.

And thus, absurdly enough, we sometimes hear men ridi-
le the phenomena which actually do happen, simply be-
use those phenomena do not suit their preconceived notions
what ghostly phenomena ought to be—not perceiving that
is very divergence, this very unexpectedness, is in itself no
ght indication of an origin *outside* the minds which obvi-
usly were so far from anticipating anything of the kind.

And in fact the very qualities which are most apt to raise derision are such as the evidence set forth in the earlier chap ters of this work might reasonably lead us to expect. For hold that now for the first time can we form a conception ghostly communications which shall in any way consist cohere with more established conceptions; which can b presented as in any way a development of facts which are a ready experimentally known. Two preliminary conceptio were needed—conceptions in one sense ancient enough; b yet the first of which has only in this generation found i place in science, while the second is as yet awaiting its brev of orthodoxy. The first conception is that with which hy notism and various automatisms have familiarized us—t conception of multiplex personality, of the potential coexis ence of many states and many memories in the same indivi ual. The second is the conception of telepathy; of the actic of mind on mind apart from the ordinary organs of sens and especially of its action by means of hallucinations; by t generation of veridical phantasms which form, as it wer messages from men still in the flesh. And I believe that the two conceptions are in this way connected, that the telepath message generally starts from, and generally impinges upon, subconscious or submerged stratum in both agent and precip ent. Wherever there is hallucination, whether delusive veridical, I hold that a message of some sort is forcing way upward from one stratum of personality to another— message which may be merely dreamlike and incoherent, which may symbolize a fact otherwise unreachable by t percipient personality. And the mechanism seems much t same whether the message's path be continued within one i dividual or pass between two: whether A's own submerg self be signaling to his emergent self, or B be telepathica stimulating the hidden fountains of perception in A. If an thing like this be true, it seems plainly needful that all th we know of abnormal or supernormal communications b tween minds, or states of the same mind, still embodied flesh, should be searched for analogies which may throw lig on this strangest mode of intercourse between embodied a disembodied minds.

A communication (if such a thing exists) from a depart person to a person still on earth is, at any rate, a communi tion from a mind in one state of existence to a mind in very different state of existence. And it is, moreover, a co munication from one mind to another which passes throu some channel other than the ordinary channels of sense, sin n one side of the gulf no material sense-organs exist. It will pparently be an extreme instance of both these classes—of ommunications between state and state, and of telepathic ommunications; and we ought, therefore, to approach it by onsidering the less advanced cases of both these types.

On what occasions do we commonly find a mind conversg with another mind not on the same plane with itlf?—with a mind inhabiting in some sense a different world, nd viewing the environment with a difference of outlook reater than the mere difference of character of the two peronages will account for?

The first instance of this sort which will occur to us lies in pontaneous somnambulism, or colloquy between a person sleep and a person awake. And observe here how slight an ccident allows us to enter into converse with a state which at rst sight seems a type of incommunicable isolation. "Awake, e share our world," runs the old saying, "but each dreamer habits a world of his own." Yet the dreamer, apparently so lf-enclosed, may be gently led, or will spontaneously enter, to converse with waking men.

The somnambulist, or rather the somniloquist—for it is the lking rather than the walking which is the gist of the matr—is thus our first natural type of the *revenant*.

And observing the habits of somnambulists, we note that e degree in which they can communicate with other minds aries greatly in different cases. One sleep-waker will go bout his customary avocations without recognizing the resence of any other person whatever; another will recognize rtain persons only, or will answer when addressed, but only n certain subjects, his mind coming into contact with other inds only on a very few points. Rarely or never will a somambulist spontaneously notice what other persons are doing, nd adapt his own actions thereto.

Next let us turn from natural to induced sleep-waking, om idiopathic somnambulism to the hypnotic trance. Here, o, throughout the different stages of the trance, we find a arying and partial (or elective) power of communication. ometimes the entranced subject makes no sign whatever; metimes he seems able to hear and answer one person, or rtain persons, and not others; sometimes he will talk freely all; but, however freely he may talk, he is not exactly his aking self, and as a rule he has no recollection, or a very perfect recollection, in waking life of what he has said or ne in his trance.

Judging, then, from such analogy as communications from one living state to another can suggest to us, we shall expect that the communication of a disembodied or discarnate person with an incarnate, if such exist, will be subject to narrow limitations, and very possibly will not form a part of the main current of the supposed discarnate consciousness.

These preliminary considerations are applicable to an kind of alleged communication from the departed—whethe well or ill evidenced; whether conveyed in sensory or in motor form.

Let us next consider what types of communication from the dead our existing evidence of communications among th living suggests to us as analogically possible. It appears to m that there is an important parallelism running through eac class of our experiments in automatism and each class of ou spontaneous phenomena. Roughly speaking, we may say tha our experiment and observation up to this point have comprised five different stages of phenomena, viz., (I) hypnoti suggestion; (II) telepathic experiments; (III) spontaneous telepathy during life; (IV) phantasms at death; (V) phantasm after death. And we find, I think, that the same types of communication meet us at each stage; so that this recurrent similarity of types raises a presumption that the underlyin mechanism of manifestation at each stage may be in som way similar.

Again using a mere rough form of division, we shall fin three main forms of manifestation at each stage: (1) hallucinations of the senses; (2) emotional and motor impulses; (3 definite intellectual messages.

(I) And first let us start from a class of experiments int which telepathy does not enter, but which exhibit in its simplest form the mechanism of the automatic transfer c messages from one stratum to another of the same personality. I speak, of course, of post-hypnotic suggestions. Here th agent is a living man, operating in an ordinary way, by direc speech. The unusual feature lies in the condition of the percipient, who is hypnotized at the time, and is thus undergoin a kind of dislocation of personality, or temporary upheaval c a habitually subjacent stratum of the self. This hypnotic personality, being for the time at the surface, receives the agent' verbal suggestion, of which the percipient's waking self unaware. Then afterward, when the waking self has resume its usual upper position, the hypnotic self carries out at th stated time the given suggestion—an act whose origin the u

er stratum of consciousness does not know, but which is in
ffect a message communicated to the upper stratum from the
ow submerged or subconscious stratum on which the sugges-
on was originally impressed.

And this message may take any one of the three leading
rms mentioned above—say a hallucinatory image of the
ypnotizer or of some other person; or an impulse to perform
ome action: or a definite word or sentence to be written au-
omatically by the waking self, which thus learns what order
as been laid upon the hypnotic self while the waking con-
ciousness was in abeyance.

(II) Now turn to our experiments in thought-transference.
ere again the agent is a living man; but he is no longer op-
rating by ordinary means—by spoken words or visible ges-
ures. He is operating on the percipient's subconscious self by
eans of a telepathic impulse, which he desires, indeed, to
roject from himself, and which the percipient may desire to
ceive, but of whose *modus operandi* the ordinary waking
lves of agent and percipient alike are entirely unaware.

Here again we may divide the messages sent into the same
ree main classes. First come the hallucinatory figures—al-
ays or almost always of himself—which the agent causes
e percipient to see. Secondly come impulses to act, telepath-
ally impressed, as when the hypnotizer desires his subject to
ome to him at an hour not previously notified. And thirdly,
e have a parallel to the post-hypnotic writing of definite
ords or figures in our own experiments on the direct tele-
athic transmission of words, figures, cards, etc., from the
gent, using no normal means of communication, to the per-
pient, either in the hypnotized or in the waking state.

(III) We come next to the spontaneous phantasms occur-
ng during life. Here we find the same three broad classes of
essages, with this difference, that the actual apparitions,
hich in our telepathic experimentation are thus far unfortu-
tely rare, become now the most important class. . . . At
nes, an agent undergoing some sudden crisis seems in some
ay to generate an apparition of himself seen by a distant
rcipient. Important also in this connection are those appa-
ions of the *double,* where some one agent is seen repeated-
in phantasmal form by different percipients at times when
at agent is undergoing no special crisis.

Again, among our telepathic impressions generated (spon-
eously, not experimentally) by living agents, we have
es, which I need not here recapitulate, of pervading sensa-

tions of distress; or impulses to return home, which are parallel to the hypnotized subject's impulse to approach his distant hypnotizer, at a moment when that hypnotizer is willing him to do so.

And thirdly, among these telepathic communications from the living to the living, we have definite sentences automatically written, communicating facts which the distant person knows but is not consciously endeavoring to transmit.

(IV) Passing on to phantasms which cluster about the moment of death, we find our three main classes of cases still meeting us. Our readers are familiar with the *visual* cases, where there is an actual apparition of the dying man, seen by one or more persons; and also with the *emotional and motor* cases, where the impression, although powerful, is not definitely sensory in character. And various cases also have been published where the message has consisted of definite words, not always externalized as an auditory hallucination, but sometimes automatically *uttered* or automatically *written* by the percipient himself, as in a case . . . where a girl writes a message announcing her friend's death at the time when that friend is, in fact, dying in a distant city.

(V) And now I maintain that in these postmortem cases also we find the same general classes persisting, and in somewhat the same proportion. Most conspicuous are the actual *apparitions*. . . . It is very rare to find an apparition which seems to impart any verbal message. . . . As a rule, . . . the apparition is of the apparently automatic, purposeless character, already so fully described. We have also the *emotional and motor* class of postmortem cases; and these may, perhaps, be more numerous in proportion than our collection would indicate; for it is obvious that impressions which are so much less definite than a visual hallucination (although they may be even more impressive to the percipient himself) can rarely be used as evidence of communication with the departed.

But now I wish to point out that, besides these two classes of postmortem manifestations, we have our *third* class also still persisting; we have definite verbal messages which a least purport, and sometimes, I think, with strong probability to come from the departed. . . . We have . . . to record and analyze such sensory experiences of living men as seem referable to the action of some human individuality persisting after death. We have also obtained some preliminary notion as to the kind of phenomena for which we can hope, espe

lly as to what their probable limitations must be, consider-
g how great a gulf between psychical states any communi-
tion must overpass. . . .

. . . One point . . . stands out from the evidence—at once
important and so manifest that it seems well to call atten-
n to it at once—as a solvent more potent than any Lucret-
could apply to human superstition and human fears.
. . . narratives, complex and bizarre though their details
ay be, we yet observe that the character of the appearance
ries in a definite manner with their distinctness and individ-
lity. Haunting phantoms, incoherent and unintelligent, may
em restless and unhappy. But as they rise into definiteness,
telligence, individuality, the phantoms rise also into love and
y. I cannot recall one single case of a proved posthumous
mbination of intelligence with wickedness. Such evil as our
idence will show us—we have as yet hardly come across it in
s book—is scarcely more than monkeyish mischief, childish
lly. In dealing with automatic script, for instance, we . . .
ve to wonder whence come the occasional vulgar jokes or
y mystifications. . . . Are . . . they . . . a kind of dream of
e automatist's own, or . . . do they indicate the existence
unembodied intelligences on the level of the dog or the
e.

But, on the other hand, all that world-old conception of
il Spirits, of malevolent Powers, which has been the basis
so much of actual devil-worship and of so much more of
gue supernatural fear—all this insensibly melts from the
nd as we study the evidence before us. . . . Here surely is
fact of no little meaning. . . . Narratives . . . collected from
en and women of many types, hold all varieties of ordinary
inion. Yet the upshot of . . . such narratives is to empha-
e a point which profoundly differentiates the scientific
om the superstitious view of spiritual phenomena. The ter-
which shaped primitive theologies still tinges for the pop-
ace every hint of intercourse with disembodied souls. The
nsmutation of savage fear into scientific curiosity is of the
ence of civilization. Toward that transmutation each sepa-
e fragment of our evidence, with undersigned concordance,
lisputably tends.

In that faintly opening world of spirit I can find nothing
rse than living men; I seem to discern not an intensifica-
n but a disintegration of selfishness, malevolence, pride.
d is not this a natural result of any cosmic moral evolu-

tion? If the selfish man (as Marcus Antoninus has it) “i
kind of boil or imposthume upon the universe,” must not
egoistic impulses suffer in that wider world a sure, even i
painful, decay; finding no support or sustenance among th
permanent forces which maintain the stream of things?

I have thus indicated one point of primary importance
which the undesignedly coincident testimony of hundreds
firsthand narratives supports a conclusion, not yet popula
accepted, but in harmony with the evolutionary concepti
which rule our modern thought. Nor does this point sta
alone. I can find, indeed, no guarantee of absolute and i
bliss; no triumph in any exclusive salvation. But the stud
of these narratives will, I think, discover throughout th
uncontradicted indications of the persistence of Love,
growth of Joy, the willing submission to Law.

These indications, no doubt, may seem weak and scatte
in comparison with the wholesale, thorough-going asserti
of philosophical or religious creeds. Their advantage is t
they occur incidentally in the course of our independent
cumulative demonstration of the profoundest cosmical th
which we can at present conceive as susceptible of any k
of scientific proof. Cosmical questions, indeed, there may
which are in themselves of deeper import than our own
vival of bodily death. The nature of the First Cause;
blind or the providential ordering of the sum of thi
—these are problems vaster than any which affect c
the destinies of men. But to whatever moral certainty we r
attain on those mightiest questions, we can devise no
whatever of bringing them to scientific test. They deal
infinity; and our modes of investigation have grasp only
finite things.

But the question of man’s survival of death stands i
position uniquely intermediate between matters capable
matters incapable of proof. It is in itself a definite probl
admitting of conceivable proof which, even if not technic
rigorous, might amply satisfy the scientific mind. And at
same time the conception which it involves is in itself a
of avenue and inlet into infinity. Could a proof of our
vival be obtained, it would carry us deeper into the
nature of the universe than we should be carried by an
perfect knowledge of the material scheme of things. It wo
carry us deeper both by achievement and by promise.
discovery that there was a life in man independent of b

d brain would be a cardinal, a dominating fact in all ence and in all philosophy. And the prospect thus opened human knowledge, in this or in other worlds, would be itless indeed.

DEATHBED OBSERVATIONS BY PHYSICIANS AND NURSES A CROSS-CULTURAL SURVEY

Karlis Osis and Erlendur Haraldsson

As a result of the last will and testament of an Arizo miner, James Kidd, the American Society for Psychi Research, in conjunction with the Psychical Resear Foundation, undertook a series of studies into the possi survival of the human personality after death. Kidd, who h been reported missing in 1949, was declared officially de in 1954. Bank auditors located Kidd's funds and will years later. In due course, his legacy amounted to so $300,000. James Kidd's handwritten will asked that money be used for "research or some scientific proof o soul of the human body which leaves at death." After sift other claims to the Kidd estate, a Phoenix court found t the two psychical research organizations were best equipp to undertake such a study. Dr. Osis, Chester Carls Research Fellow of the American Society for Psychi Research, and Dr. Haraldsson, University of Iceland Reykjavik, collaborated on this paper; it originally appea in the Journal of the American Society for Psychical R search (*Vol. 71, No. 3, July, 1977*).

At times dying patients "see" persons and visionary la scapes which others present do not see. Usually su deathbed visions are interpreted as mere hallucinations wh have no basis in external reality. In the early years of psyc cal research, Myers (1903) and Hyslop (1908) recogniz some possibly paranormal elements in a few selected cases visions of dying patients. Sir William Barrett, a physicist the Royal College of Science, Dublin, was interested in su s and presented a number of them in a small book enti- *Death-Bed Visions* (1926). While some of his cases were fully observed by physicians and nurses, others are of r evidential quality. Barrett was particularly impressed by ns that seemed to mirror some form of contact between nts who were fully rational and cognizant of their physi- urroundings and their deceased relatives who, presum- had passed on to the "other world." Often in these cases stensible purpose of the deceased was to take the patient to a postmortem plane of existence. Barrett emphasized s in which apparitions ran contrary to the patient's expec- ns, for example, apparitions of persons the patient ght were still living, but who in fact were dead. In ral of Barrett's cases the apparitions were experienced ei- with exalted feelings or with emotions of serenity and e. Deathbed visions, Barrett pointed out, often did not orm to cultural stereotypes, e.g., dying children were sur- d to see "angels" without wings.

me 30 years later, Barrett's work inspired one of us).) to systematically study deathbed experiences using ern survey methods and statistical evaluations. In 1959- under the auspices of the Parapsychology Foundation, . conducted such a survey. It was the first of its kind and be referred to in this paper as the "pilot survey." The re- on the pilot survey was published by the Parapsychology ndation as a monograph, *Deathbed Observations by icians and Nurses* (Osis, 1961).

.O. found that deathbed visions which appear to be sug- ve of postmortem survival tended to be independent of rs known to cause hallucinations, enhance their occur- e, or influence their content. Medical factors—such as ss predisposing to hallucinatory experiences, high fevers, ication with morphine, etc.—did not seem to generate an ase in the frequency of after-life related experiencs. In instances, such medical factors even appeared to ress survival-related phenomena. Moreover, personal bles such as the patient's sex, age, education, socio- omic status, and religious affiliation, also appeared to be ttle importance.

he contents of the dying patients' hallucinations were an- ed and found to be different from those of hallucinations e general population and the mentally ill. For example, icinations of the dying are usually visual, as is the case in ESP experiences, and rarely auditory, the predominant mode in mentally disturbed persons. Terminal patients w reported to have seen apparitions of the deceased, rather th of the living, two or three times more often than do people the general population. Of all the apparitions of identif persons, 90% were of relatives of the patient; of these, 90 were close relatives: mother, father, spouse, sibling, and spring. This occurs infrequently in the hallucinations of general population.

K.O. also performed extensive interaction analyses on data of the pilot study. This led to the discovery of many p terns which supported the postmortem survival hypothe He believed, however, since most of the findings were p hoc, that without verification in later surveys the weight the findings would be rather limited.

The two new cross-cultural surveys described in this pa were carried out to replicate the pilot study. The range questions was greatly expanded in order to obtain more formation which might either support the evidence for po mortem survival, or provide facts contradicting it and t lend weight to what we have termed the "destruction pothesis." Information from the pilot survey and other so ces was used to formulate a model, or series of hypothe concerning deathbed visions. The model is a bipolar which sharply contrasts two mutually exclusive concepts: survival hypothesis and the destruction hypothesis.

A MODEL OF THE TWO BASIC HYPOTHESES OF DEATHBED VISIONS

Survival	*Destruction*
Death is the transition to another mode of existence.	Death is the ultimate destr tion of the personality.

A. Sources of Deathbed Visions

Extrasensory Perception	*Sick Brain or Delusion*
1. Extrasensory awareness of discarnate entities, e.g., deceased relatives and religious figures.	1. Malfunction of the vous system and the dy brain.
2. Clairvoyant or precognitive glimpses of postmortem existence.	2. Schizoid reactions to vere stress.

Influence of Hallucinogenic Factors on Deathbed Visions

Independent of Medical Factors	*Dependent on Medical Factors*
The presence of hallucinogenic medical factors will not increase the frequency of visions related to postmortem existence.	1. The presence of hallucinogenic medical factors will increase the frequency of hallucinations related to postmortem existence—i.e., the more disturbed the brain processes, the more numerous the “other-world” fantasies.
Conditions detrimental to ESP will decrease the frequency of after-life related phenomena.	2. ESP not involved.

C. Content of Deathbed Visions

Perceptions	*Hallucinations*
After-life related visions will be relatively coherent, and oriented to the situation of dying and the transition to another mode of existence, including “other-world-” messengers and environments.	1. Hallucinations will portray only memories already stored in the brain and express desires, expectations, and fears of the individual, as well as beliefs characteristic of his culture.

Influence of Psychological Factors on Deathbed Visions

Conditions Related to Awareness of an “Other World”	*Conditions Related to Hallucinations of This World or “Other-World” Fantasies*
Clarity of consciousness and an intact sense of reality will facilitate awareness of an “other world” and its messengers, while states in which contact with external reality absent will impair such awareness.	1. Clarity of consciousness and an intact sense of reality will be less conducive to all kinds of hallucinations than states in which contact with reality is absent.

2. Patients' expectation of recovery or dying will not influence the occurrence of after-life related visions.	2. Patients' expectation of r covery will facilitate this-li hallucinations, while expect tion of dying will facilita hallucinations of an after-lif
3. Presence of stress will not increase the frequency of visions related to an after-life.	3. Presence of stress will i crease the frequency of hall cinations related to an afte life.

E. Variability of Content Across Individuals and Cultures

Perceptions	*Hallucinations*
1. Little variability.	1. Much variability.
2. Visions involving basic characteristics of the "other world" will be essentially similar for men and women, young and old, educated and illiterate, religious and nonreligious, Christian and Hindu, American and Indian. Only minor differences among them will be expected.	2. Hallucinations are pure subjective. They will va widely with the dispositio psychological dynamics, a cultural background of t individual.

Method

We approached physicians and nurses in both the Unite States and India in two steps: (a) a two-page initial questio naire was distributed concerning the extent and kinds of o servations they had made of dying patients, and of those wh were close to death but recovered; (b) individual intervie were held with respondents on the details of cases reported i the questionnaires and which fell within the scope of the su vey.

Questionnaires and Procedure

The survey in the U.S. was conducted between 1961 a 1964 in New York, New Jersey, Connecticut, Rhode Islan nd Pennsylvania. The second survey was carried out in orthern India during 1972-73.

Although the same basic questionnaire was used in both rveys, slight adjustments were made in the questions asked the Indian respondents—e.g., tropical diseases and the indu and Moslem religions were covered—in order to acommodate them to the cultural differences.

In the initial questionnaire we asked the medical personnel bout their observations of the following:

1. Hallucinations of *human figures* experienced by (a) *terinal* patients (those not recovering), and (b) by *non-termial* patients (those who were close to death but recovered).

2. Hallucinations of *surroundings* (landscapes, etc.) experinced by (a) *terminal* patients, and (b) by *non-terminal* paents.

3. Mood elevation (sudden rise of mood to elation or seenity) in *terminal* patients.

In the U.S. the questionnaire, with a covering letter, was ailed to a stratified random sample of 2,500 physicians and ,500 nurses. Those not responding received another letter sking for a reply. A total of 1,004 responses was received.

Our Indian consultants advised us not to use the mails to istribute the questionnaire. We therefore worked mainly in rge university hospitals. Usually the professor of medicine r professor of surgery arranged meetings with the hospital aff during which we gave a short talk and distributed the uestionnaires to be filled out. Practically all the physicians nd nurses we approached returned the completed questionaires (a total of 704).

nterviews

American respondents who reported pertinent cases were terviewed by telephone. In India, telephone contacts had to e replaced by personal interviews, mainly in hospitals but ometimes in the homes of the respondents.

We developed three separate follow-up questionnaires for e following types of experience: (a) hallucinations of huan figures, (b) hallucinations of surroundings, and (c) ood elevation. Each of these questionnaires consisted of 69 uestions used to guide the interview.

Open-ended questions were used, e.g., "What was the paent's behavior indicating that he/she was experiencing hallunations?" Questions proposing a set of alternative answers

were also used, e.g., “Was the patient calmed by the halluc
nation, did he/she become excited, or was there no apparen
effect?”

Questions covered (a) characteristics of the patient such
sex, age, education, religious belief and degree of involvemen
in it, and belief in an after-life; and (b) medical factors suc
as diagnosis, medical history, medication, temperature, an
clarity of consciousness. Additional questions elicited i
formation from the respondents concerning their date
graduation from professional school, degree received, rel
gious beliefs, belief in life after death, and attitudes towar
hallucinations. The main part of the questionnaire was d
voted to obtaining as many details as possible about the e
perience reported, e.g., how the patient described th
hallucination. A total of 877 cases, about evenly divided b
tween the U.S. and India, comprise the main part of the data.

Evaluation of the Data

The interview data were coded and recorded on compute
cards. Each item in the various categories was analyzed fo
frequency of occurrence. For example, responses to the que
tion, “What was the primary diagnosis of the illness?” wer
grouped into basic categories such as malignancies, cardiova
cular disease, respiratory disease, kidney disease, brain diseas
or injury, etc. Then the data were submitted to cross-tabu
lations. Items describing factors that might influence eac
other were considered jointly: for example, comparisons b
tween the number of patients suffering from diseases know
to cause hallucinations (brain diseases, uremia) and the num
ber of patients suffering from other kinds of diseases wer
made in terms of the frequency with which the patients hallu
cinated living persons, dead persons, etc. Differences wer
assessed by chi-square statistics. We report below only proba
bilities associated with the chi-square analyses. We used th
significance level of $P = .05$ (two-tailed).

Results

We completed a similar number of interviews in the U.S
(442) and in India (435). The vast majority of patients in
volved were terminally ill (714). We also had 163 cases o
patients who recovered from near-death conditions. Halluc

nations of human figures, or seeing apparitions, was the type of phenomenon most frequently reported (by 591 patients). A total of 112 vision cases were primarily of heavenly abodes, landscapes, gardens, buildings. In 174 cases, patients did not report seeing anything unusual, but their moods became elevated to serenity, peace, elation, or religious emotions. This report covers only cases of apparitions of human figures seen by terminal patients (471 cases).

Characteristics of Apparitions Seen by Terminal Patients

As noted above, reports of terminal patients "seeing" persons not observed by others present comprise by far the argest and most interesting part of our data. The sample derives from 216 interviews with American respondents and 255 from Indian respondents.

Duration of Apparition: As in most instances of spontaneous ESP, the apparitional experiences were usually of quite brief duration: 48 percent lasted for five minutes or less, 17 percent from six to 15 minutes, and only 17 percent for more than an hour (Table 1, Row a).

Timing of Apparition: The closer in time the apparition was to the patient's death (Table 1, Row b), the more frequently it had characteristics suggestive of an after-life. The ime between seeing an apparition and losing consciousness was generally shorter than the time between losing consciousness and clinical death.

Identity of Apparition: The apparitions in our sample portrayed living persons, dead persons, and mythological or hisorical religious figures. According to the findings of the pilot tudy, apparitions of the living have nothing to do with postmortem survival. On the other hand, apparitions of the dead nd of religious figures may have characteristics suggestive of fe after death. We termed apparitions in this category "survival-related apparitions," and they comprised 80 percent of he cases in the pilot survey. The proportion of survival-elated apparitions in the present survey was remarkably milar to that of the pilot survey: 83 percent in the U.S. and 9 percent in India (Table 1, Row c).

Table 1

Characteristics of the Apparitional Experience in Terminal Patients

Variables	Characteristics	Number of Cases			Percentage*		
		U.S.	India	Total	U.S.	India	Tota
a. Duration of apparition	1 sec.-5 min.	85	83	168	65	38	48
	6-15 min.	17	43	60	13	20	17
	16-59 min.	11	50	61	9	23	18
	1 hr.-1 day	13	31	44	10	14	13
	Longer	4	10	14	3	5	4
	No information	86	38	124	—	—	—
b. Interval between apparition and death	0-10 min.	17	36	53	9	14	12
	11-59 min.	7	59	66	4	23	15
	1-6 hrs.	26	64	90	13	25	20
	7-24 hrs.	28	41	69	14	17	15
	Longer	117	52	169	60	21	38
	No information	21	3	24	—	—	—
c. Identity of apparition	Living	30	38	68	16	20	18
	Dead	124	54	178	66	28	47
	Religious figure	22	93	115	12	48	30
	Combination of above	11	7	18	6	4	5
	No information	29	63	92	—	—	—
d. Sex of apparition	Male	59	103	162	39	77	57
	Female	91	30	121	61	23	43
	No information	66	122	188	—	—	—
e. Purpose of apparition	Taken for visitor	14	28	42	14	14	14
	To comfort patient	13	4	17	13	2	6
	To take patient away, with consent	40	102	142	41	50	47
	To take patient away, without consent	1	53	54	1	26	18

Table 1 (*Continued*)

Variables	Characteristics	Number of Cases			Percentage*		
		U.S.	India	Total	U.S.	India	Total
	To send patient back	0	2	2	0	1	1
	Threatening	4	13	17	4	6	6
	Reliving memories	26	1	27	27	1	9
	No information	118	52	170	—	—	—
Emotional reactions, 1st group	No effect or relaxation	60	65	125	31	28	30
	Serenity	46	40	86	23	18	20
	Elation	56	32	88	29	14	21
	Negative	33	91	124	17	40	29
	No information	21	27	48	—	—	—
Emotional reactions, 2nd group	No effect or relaxation	60	65	125	31	28	30
	Negative	33	91	124	17	40	29
	Positive, non-religious	77	36	113	39	16	27
	Positive, religious	25	36	61	13	16	14
	No information	21	27	48	—	—	—

* Percentages do not include cases about which no information s available. Figures in some percentage columns do not add to 100 due to rounding off.

Could these proportions be characteristic of hallucinations general among persons who are not near death? Fortu- ely, two British surveys of hallucinations experienced by general population provided data for comparison. In the ensus of Hallucinations” (H. Sidgwick and Committee, 94) it was reported that only 33 percent of the sample had lucinations similar to those in our survival-related group; J. West (1948, p. 190) reported 22 percent in a “mass ob- vation” survey. (Categories that do not fit our classifica- n scheme are excluded in the calculation of these centages.) Thus we conclude that terminal patients in both pilot and in the present survey saw apparitions of the d and of religious figures about three times more fre- ently than the general population sampled in these two tish studies.

While the proportion of survival-related apparitions in
U.S. and India is remarkably stable, the identity of the app
itions experienced within this group varied greatly. Ameri
patients for the most part saw deceased persons while Ind
patients predominantly saw religious figures (Table 1, Row
Table 2, Rows a and b). In a detailed analysis to be repor
elsewhere we were able to trace some, but not all, of the r
sons which might account for these differences. In the visi
of the Indian patients (especially the males), female figu
were extremely rare (Table 1, Row d). This fact alone co
have reduced the total number of apparitions of the de
thereby increasing the proportion of religious figures in
Indian sample (Table 2, Row b). Thus, while the freque
of survival-related apparitions is the same in both samp
the characteristics of these apparitions are strongly molded
cultural forces.

Table 2

Identity of Apparitional Figures*

		Number of Figures			Percentage		
Variables	Identity	U.S.	India	Total	U.S.	India	T
a. Secular	Mother	60	16	76	28	14	
	Father	15	16	31	7	14	
	Spouse	49	10	59	23	8	
	Sibling	27	15	42	12	13	
	Offspring	27	17	44	12	14	
	Other relatives, previous generation	5	7	12	2	6	
	Other relatives, same generation	2	10	12	1	8	
	Other relatives, next generation	0	4	4	0	3	
	Unidentified relatives	9	14	23	4	12	
	Friends, acquaintances	21	8	29	10	7	
	Unidentified persons	25	61	86	—	—	
	Totals:	240	178	418	—	—	

Table 2 (*Continued*)

Variables	Identity	Number of Figures U.S.	Number of Figures India	Number of Figures Total	Percentage** U.S.	Percentage** India	Percentage** Total
	God or Jesus	13	17	30	42	22	28
	Shiva, Rama, Krishna	0	13	13	0	17	12
	Mary, Kali, Durga	5	4	9	16	5	8
	God of death & messengers	0	18	18	0	24	17
Religious	Saints & gurus	3	5	8	10	7	8
	Angels, Devi, etc.	9	17	26	29	22	24
	Demons & devils	1	2	3	3	3	3
	Other religious figures, unidentified	2	31	33	—	—	—
	Totals:	33	107	140	—	—	—

* Totals include cases in which several figures were seen by same patient.

** Percentages do not include cases about which no information
available. Figures in some percentage columns do not add up
100 due to rounding off.

Ninety-one percent of all identified apparitions of persons
re relatives of the patient. (In 20 percent, the identity of
apparition was not ascertained.) Of these, 90 percent
re close relatives, i.e., mother, spouse, offspring, sibling,
d father—in that order of frequency (Table 2, Row a).
e religious figures were usually described merely as an an-
or god, or were unidentified. When identified they were
ned according to the patient's religion, e.g., no Hindu re-
ted seeing Jesus; no Christian a Hindu deity.

urpose of Apparition: Quite often patients told respon-
ts why the apparition had visited them. In 50 percent of
cases in the pilot survey, the stated purpose of the appari-
n was to aid patients in their transition to another world:
take them away." In the present study this purpose was
orted in 65 percent of the cases (Table 1, Row e). For
ther analyses we excluded two somewhat ambiguous cate-
ies: that the figure came "to comfort" the patient, which
ld imply either a "this-life" purpose or a "take-away" pur-

pose, and cases where patients were said to be "relivi memories" which, of course, indicates no contemporary pu poses. Thus, after adjusting the data in this way, the tal away purpose is clearly dominant in all three surveys: pil 76 percent; U.S., 69 percent; India, 79 percent.

Patients' Response to Apparition: In the pilot survey it w found that a large majority (89 percent) of the patients w saw apparitions with a take-away purpose eagerly consent "to go" with them. Although consent was expressed in percent of the present survey's take-away cases, 28 perce did not consent, and some patients reacted with fright a screams for help. Practically all these negative respon came from Indian patients who refused to consent (Table Row e). In our unpublished interaction analyses we fou that this difference in consent between the U.S. and Indi samples may be partly due to the patients' religion and par to their nationality.

Patients were said to have reacted to the apparition w noticeable emotions in 70 percent of the cases.* Many them reacted with positive emotions (41 percent), while considerable number (29 percent) had negative emotions particularly in cases where the patient did not consent " go" with the apparition. Of those with positive emotional actions, half were serene and peaceful and half were elat (Table 1, Row f). We also asked our respondents to evalua patients' positive emotions as religious or nonreligious fe ings (Table 1, Row g). They reported that 35% of tho positive emotions were of religious nature. Terminal pa ents usually suffer from pain and other kinds of discomfo consequently their moods are rather depressed. The elati and serenity that the survival-related apparitions aroused most of the patients contrasted sharply against the gloom dying.

Medical Factors

Drugs: Various medical factors are known to increase likelihood of hallucinatory behavior. Medication consisting tain analgesics and sedatives, such as morphine and De- rol, might have caused hallucinations in some of our cases. wever, the majority (61 percent) of the 425 patients about om we have such information had not received drugs ch could cause hallucinations. Half of those who were un- sedation had received such small doses or such weak gs that the respondents did not consider them to have n psychologically affected. Of the 20 percent who were in- nced, more than half (11 percent) were said to be only dly affected. Eight percent were moderately affected and y 1 percent strongly affected (Table 3, Row d). Thus the dence indicates that in most cases the apparitional experi- es were not drug-induced.

---

* Patients' emotional reactions to apparitional experiences w ascertained on an alternative question scale. For our analy items registering positive emotions were grouped together as either serenity or elation (Table 1, Row f), or (b) either posit nonreligious emotions or positive religious emotions (Table Row g).

emperature: High body temperature sometimes leads to ucinations. Only 8 percent of the patients ran fevers of r 103 degrees (measured orally) which might have facili- d hallucinatory behavior (Table 3, Row c).

iagnoses: Hallucinations may be associated with injury diseases of the brain, and with uremic poisoning caused kidney malfunction, although many brain-injured patients, ecially those with strokes, do not hallucinate. Only 12 per- t of the patients in our sample, including stroke cases, had h diagnoses (Table 3, Row a).

n addition to primary diagnoses, we also considered sec- dary illnesses, previous illnesses, and any other factors in patient's history which might have been hallucinogenic, ., alcoholism or mental illness. This measure is rather in- ed since we included in it diagnoses only suspected by the sician and diseases which were not active at the time of terminal illness. We also included the primary diagnoses olving the three hallucinogenic categories discussed above. y 25 percent of the patients had secondary diagnoses ich could have been hallucinogenic (Table 3, Row b).

"Hallucinogenic Index": It was also important to know many patients might have had at least one of the follow- possible hallucinogenic factors: drugs, high fever, and pri- y and/or secondary diagnoses of a hallucinogenic nature. therefore established a "hallucinogenic index" which in- des every patient who had one or more of the above-men- ed indices. It should be noted that we included in this x cases which do not strongly suggest that the patients' ucinations were of an abnormal origin, e.g., stroke cases, s in which medication only slightly affected clarity of sciousness, etc. Nevertheless, such indices are present in

only 38 percent of the cases; the majority (62 percent) a
free of them. In the pilot survey, it was found that deathb
visions are relatively unaffected by medical factors. The da
from the present survey give the same impression.

Clarity of Consciousness: We inquired into the clarity
consciousness of the patient at the time of the apparitio
experience, a condition which is closely related to medi
factors. We had this information for 457 cases. Almost h
(43 percent) the patients were in a normal state of co
sciousness; they were fully aware of and responsive to th
environment. In 29 percent awareness was mildly impair
but the respondents could still communicate with their p
tients. Only 17 percent were in such a severely impaired sta
of consciousness that little or no communication was possib
In 11 percent clarity fluctuated and could not be accurat
determined for the times the hallucinations were experienc
(Table 3, Row e).

Hallucinogenic medical factors are clearly absent in tv
thirds of our data. Could these factors nevertheless have a
fected the remaining third of the patients who were includ
in the "hallucinogic index"? Could they have spuriously e
hanced the frequency of those characteristics which we
found in the pilot study to support the postmortem surviv
hypothesis? These characteristics are (a) predominance
survival-related apparitions of dead persons and religious f
ures, (b) their "take-away" purpose, and (c) the patients' a
propriate emotional reactions. Cross-tabulations between t
"hallucinogenic index" and the nature of the apparition (l
ing, dead, or religious figure) show that there was no signi
cant interaction. The presence of hallucinogenic factors d
not increase the frequency of survival-related trends such
apparitions of the deceased, religious figures, or expression
the "take-away" purpose. Hallucinogenic factors did, ho
ever, significantly affect the expected emotional reactions
the patients in the American sample ($P = .03$). They seem
to suppress serenity, peace, and religious emotions, and to
crease the incidence of negative reactions. This trend is n
significant in the Indian sample. We conclude that the me
cal variables ascertained in the survey seem to be relativ
unrelated to the apparitional experiences in terminal patients

2031 8/1
20541

Table 3

Medical Status of Terminal Patients Seeing Apparitions

Variables	Medical Status	Number of Patients			Percentage*		
		U.S.	India	Total	U.S.	India	Total
a. Primary diagnosis	Cancer	79	28	107	37	11	23
	Heart & circulatory disease	61	39	100	29	16	22
	Injury & post-operative	10	62	72	5	25	16
	Respiratory disease	9	26	35	4	11	8
	Brain injury/ disease, uremia	28	26	54	13	11	12
	Miscellaneous	25	64	89	12	26	19
	No information	4	10	14	—	—	—
b. Secondary diagnosis, possibly hallucinogenic	Present	68	40	108	33	18	25
	Absent	137	187	324	67	82	75
	No information	11	28	39	—	—	—
c. Body temperature (oral)	Less than 100°	128	129	257	64	53	58
	100°-103°	55	94	149	28	39	34
	Above 103°	16	20	36	8	8	8
	No information	17	12	29	—	—	—
d. Medication affecting consciousness	None	94	165	259	49	71	61
	Medication, no effect	39	40	79	20	17	19
	Mildly affected	31	18	49	16	8	11
	Moderately affected	22	10	32	12	4	8
	Strongly affected	5	1	6	3	0	1
	No information	25	21	46	—	—	—
	Clear	98	100	198	48	39	43
	Mildly						

Table 3 (*Continued*)

Variables	Medical Status	Number of Patients U.S.	India	Total	Percentage* U.S.	India	Total
e. Clarity of consciousness	impaired	31	103	134	15	41	29
	Severely impaired	36	39	75	18	15	17
	Fluctuating	38	12	50	19	5	11
	No information	13	1	14	—	—	—

* Percentages do not include cases about which no information was available.

Demographic Factors

Demographic factors such as age, sex, educational level, and occupation (Table 4, Rows a-d) did not interact significantly with any aspects of the patients' apparitional experiences.

Psychological Factors

We analyzed several psychological factors to determine whether they tended to shape the phenomenological aspects of the main phenomena: apparitions of the living, the dead, and religious figures, purpose of the apparitions; and the patients' emotional reactions to them.

Stress: Hallucinations tend to occur in situations of severe stress and social deprivation (Siegel and L. J. West, 1976; L. J. West, 1962). Not only are visits to terminal patients by relatives and friends often restricted, but most such patients are going through very stressful situations, compounded by having to cope with severe pain. Therefore, could their hallucinatory experiences be due to stress rather than to extrasensory awareness of "visitors" from another mode of existence? We attempted to answer this question by evaluating an indirect indication of stress found in the data of the patients in our sample—their mood on the day before the hallucination occurred. We assumed that negative moods such as anxiety, anger or depression would indicate more stress than would positive moods. The least stress, we believed, would be indicated by mood designated by our respondents as "normal" or "average."

Table 4

Characteristics of Terminal Patients Seeing Apparitions

		Number of Patients			Percentage*		
Variables	Characteristics	U.S.	India	Total	U.S.	India	Total
a. Age	1-30	19	68	87	9	27	19
	31-50	22	97	119	10	38	25
	Over 50	174	90	264	81	35	56
	No information	1	0	1	—	—	—
b. Sex	Male	99	175	274	46	69	58
	Female	117	80	197	54	31	42
c. Education	None, pre-school	13	77	90	7	32	21
	Primary	57	59	116	30	25	27
	High school	73	65	138	39	27	32
	College	45	38	83	24	16	20
	No information	28	16	44	—	—	—
d. Occupation	Professional, manager, clergy	56	29	85	41	19	30
	Clerical, sales, crafts	9	40	49	7	26	17
	Farmer, laborer, services, housewife	70	83	153	52	55	53
	No information	81	103	184	—	—	—
e. Religion	Hindu	—	214	214	—	85	48
	Christian	—	26	26	—	10	6
	Moslem	—	12	12	—	5	3
	Protestant	97	—	97	51	—	22
	Catholic	68	—	68	36	—	15
	Jewish	12	—	12	6	—	3
	Other or none	14	—	14	7	—	3
	No information	25	3	28	—	—	—
f. Degree of involvement in religion	No involvement	12	3	15	8	2	5
	Slight	27	12	39	18	9	14
	Moderate	44	48	92	30	38	33
	Deep	64	65	129	44	51	47
	No information	69	127	196	—	—	—

Table 4 (*Continued*)

Variables	Characteristics	Number of Patients			Percentage*		
		U.S.	India	Total	U.S.	India	Tota
g. Belief in an after-life	Belief	69	70	139	92	92	92
	No belief	6	6	12	8	8	8
	No information	141	179	320	—	—	—

* Percentages do not include cases about which no informatio was available. Figures in some percentage columns do not add u to 100 due to rounding off.

There were no significant interactions between the patients moods on the day prior to the apparitional experiences an what the apparition represented. We also failed to find an appreciable interaction between mood and patients' emotiona reactions to the apparitional experience. The purpose of th apparition was not significantly related to mood in either th American or the Indian sample taken separately. Howeve this relationship is significant in the pooled data from bot populations ($P = .001$), and it is in the direction opposite t what would be expected on the hypothesis that stress is causative factor in apparitional experiences. Patients wit normal moods experienced apparitions with a peaceful "take away" purpose more frequently (54 percent) than did thos who had positive (31 percent) or negative (27 percent moods. From these data we may infer that while the stres experienced by the terminal patients might have caused othe kinds of hallucinations, it is unlikely that it affected the incidence of apparitions which expressed purposes related t postmortem survival.

Desires and Expectations: A patient's desires, expectation or "wishful thinking" might be possible causes of halluc nations. For example, a thirsty traveler in the desert migh have the illusion of seeing water when none was there. W ascertained from our respondents the number of patients wh had expressed a desire to have a visit from a living perso such as a spouse or a child, and then checked on how man of these persons were later hallucinated. We found only 1 such cases, an insignificant fraction of the total sample. Fu thermore, there were no indications in the data to sugges that persons who had recently visited the patient appeare frequently in his hallucinations. Of those visitors, only nin were hallucinated.

Fear of Dying: In order to cope with their fear of dyin patients who expect to die might be motivated to hallucinate "messengers" from the after-life. (This would not be the case for patients who expect to recover.) In neither the American nor the Indian sample, however, were the intentions or identity of the survival-related apparitions significantly correlated with the patients' expectations of living or dying. This is particularly apparent in cases where the patient did not consent to the "take-away" purpose of the apparition and screamed for help. Patients' emotional reactions to the apparitional experiences also failed to relate significantly to the motivational variables ascertained in the surveys.

Cultural Factors

We hoped that cross-cultural comparisons would throw light on the hypothesis that some deathbed visions may portray certain aspects of a reality external to the patient.

According to our model we assume that some apparitions may in some way exist independent of the observer. As cultural factors have a more powerful effect on subjective hallucinatory experiences than on observations of external reality, the degree of influence of such factors as religion and belief in postmortem survival might give a clue as to the true nature of deathbed visions.

Religion: Our sample population consisted mainly of Christians (43 percent) and Hindus (48 percent). In the U.S. the stratifications were 51 percent Protestant, 36 percent Catholic, 6 percent Jewish, and 7 percent unaffiliated or belonging to other religions. Eighty-five percent of the Indian patients were Hindu, 10 percent were Christian, and 5 percent were Moslem (Table 4, Row e). This distribution roughly equals the affiliation proportions among the general population in the areas surveyed, except for the small unaffiliated group in the U.S. This discrepancy disappears if we assume that most of the patients whose affiliations were not reported actually were not affiliated with any religious denomination. Apparently religious affiliation was not a factor in determining the phenomena. The question remains, however, whether the patients' religion could have determined the important core characteristics of the apparitions. Religion did not significantly influence the purpose or the kind of appari- currences of survival-related apparitions (of the dead and/or tion seen (living, dead, or religious figures). And both the oc- religious figures) and their after-life purposes appear to have transcended the widely divergent religious ideologies of Hindus, Catholics, Protestants, Jews, and Moslems.

The patients' emotional reactions of serenity, elation, and religious feelings engendered by apparitional experiences were similar among Catholics and Protestants in the U.S. Unfortunately, we had too few patients of other religions for effective comparison in the American sample. Therefore Catholics and Protestants were compared only with the rest of the patients as a whole—including those who were unaffiliated, those of other religions, and those whose affiliations were not reported. This mixed group showed different emotional reactions such as less serenity ($P = .02$) and less religious feelings ($P = .06$).

In India the small minority of Christian patients was reported to have reacted more with serenity and religious emotion than the Hindus did. Part of this difference was traced to the respondent bias of Christian nurses and therefore it cannot be interpreted with reasonable certainty. However, there were more similarities than differences: like Americans, many Hindu patients responded with serenity, peace, and religious emotions.

The real difference between the American and Indian reactions to the apparitional experience lies in the patients' readiness to consent to the "take-away" purpose of the apparition: with only one exception, all the American patients were ready "to go," while 34 percent of the Indian patients were not. Can this be explained in terms of their differences in religion? There was indeed a difference, though not a significant one: only 16 percent of the Indian Christians did not consent "to go," as compared to 37 percent of the Hindu patients. It seems probable that this no-consent attitude is due to both national and religious factors. Patients' involvement in religion did not significantly affect the nature of the apparition experienced, its purpose, or their emotional reactions to it.

Belief in Life after Death: A patient's belief in life after death is important for understanding his ways of coping with approaching death. Yet surprisingly few (one third) of our respondents were aware of their patients' beliefs, or lack thereof, in an after-life. The majority of them reported that they either did not discuss the matter with the patients, or did not pay enough attention to remember it (68 percent of the cases). It is remarkable that 12 patients who *did not* believe in life after death saw apparitions (Table 4, Row g). This, of

rse, is too small a sample for detailed interaction analysis.
assumed that patients whose beliefs were weak or nonex-
nt might have been more likely to neglect mentioning the
ter to their physicians or nurses than would those who
strong convictions. We therefore contrasted this "no in-
nation" group with the believers.

ur analysis revealed that belief in an after-life has no sig-
cant influence on the frequency of the kind of apparition
n, though it did seem to influence the patient's ostensible
nmunication with it. More patients in the "believers"
up than those in the "no information" group experienced
aritions with a "take away" purpose and consented "to
' with them. This difference is significant in both the U.S.
$= .05$) and the Indian ($P = .004$) sample. There was no
h difference in Indian patients who did not consent "to
" (Since there was only one "non-consenter" in the Ameri-
sample, this comparison could not be made.)

Belief in life after death did not significantly affect serenity
elation in the American patients, but it did increase such
ings at the expense of negative reactions in the Indian
ple ($P = .005$). In both countries, belief strongly in-
ased positive religious responses (U.S., $P = .004$; India,
$= .002$).

A number of other variables were ascertained and an-
zed—among them the possibility of respondent bias, as
ntioned above—but they are not discussed here due to
k of space. Reports on phenomena other than halluci-
ions of human figures were also collected and evaluated:
ons of scenery, etc., mood elevation shortly before death,
experiences of patients who were near death but recov-
d. We hope to report on these elsewhere.

Discussion

The American and Indian surveys were designed to repli-
e the findings of the pilot survey and to provide more de-
ed data bearing on the hypothesis of postmortem survival.
ile the pilot survey unearthed many findings which were
rpreted as being consistent with the after-life hypothesis, it
severe limitations concerning the statistical certainty of
se findings. Because the pilot survey was the first of its
d, previous information was inadequate in helping to
dict many of the trends which emerged in that study.

Therefore the possibility that such unexpected trends we
due to chance variations could not be ruled out. Howev
most trends in the present survey are reasonably consiste
among themselves and with those of the pilot survey. T
diminishes the probability of chance as an acceptable e
planation.

Our model of deathbed experiences related to postmorte
survival assumes (a) that survival-oriented apparitions m
to some extent be due to ESP of or from "another worl
(e.g., deceased relatives or religious figures) or (b), if this
not the case, are entirely subjective. Therefore we hypoth
sized that medical factors which often cause hallucinatio
but which are not known to affect ESP will not increase t
frequency of seeing after-life related apparitions. In all thr
surveys, the data conformed to this hypothesis. Furthermo
we postulated that medical conditions which impede senso
(and, we presume, extrasensory) contact with the extern
world also reduce the incidence of seeing after-life orient
hallucinations. This was confirmed.

We carefully considered psychological factors which mig
have caused hallucinations. Severe stress, especially in situ
tions of drastically reduced social contact, can find release
hallucinations. Psychiatrists suggest that deathbed visions act
ally are schizoid episodes through which patients cope w
very stressful situations by hallucinating pleasing fantasies
another world. A careful analysis of the data revealed
support for this counterhypothesis. Stress was not significan
related to the core phenomena of deathbed visions. In bo
the American and Indian samples, the trend went in the o
posite direction: stress tended to reduce the survival-relat
aspects of these experiences. Patients' desires, wishes, and e
pectations also had no significant influence. In a large nu
ber of cases, patients experienced apparitions which appear
to be in opposition to their own motivations, though co
sistent with our hypothesis of postmortem survival. Son
psychiatrists have developed the concept of "latent mo
vation"—motivation which is not expressed verbally
exhibited in behavior. However, this concept has be
severely criticized and generally rejected in scientific researc
We did not find any definite indices in our data of "late
motivation" with regard to the main phenomena of deathb
visions.

The most viable counterhypothesis is cultural conditioni
In childhood and youth, cultural beliefs are transmitted to

arious ways. Could they re-emerge in the visions of the
g—a kind of playing back of old records? The cross-cul-
l survey in India was primarily done with this question in
. Our model assumes that individual and cultural factors
completely shape deathbed visions, provided they are
ed by these factors. However, if they are based on per-
ion of some form of external reality, or ESP glimpses of
other world," we hypothesized that only modest differ-
es between cultures would emerge, with the main features
aining the same. An analogy could be found by contrast-
a typically American and a typically Indian painting of a
ntain: the details would be quite different while the basic
racteristics of a mountain would be clearly recognizable.

Ve found a very close agreement in all three surveys with
ard to the frequencies of survival-related apparitions: dead
religious figures versus those of the living. The ostensible
ke-away" purpose of the apparition was also equally
sent. Absence of influences by medical and psychological
iables was indicated in all three samples. The core phe-
nena are the same.

ultural coloring, however, was present. The sex of the
ucinatory figure was largely determined by culturally con-
oned preferences which, in turn, seem to influence the
portion of hallucinations of dead and religious figures. Re-
on had a comparably slight influence on the main phenom-
, though it did, of course, determine the naming of the
gious figures. We interpret these modest cultural differ-
es according to our model: they seem to support the hy-
hesis that deathbed visions are, in part, based on extra-
sory perception of some form of external reality rather
n having entirely subjective origins.

ach culture develops dominant attitudes or values
cerning what is desirable and meritorious to say or do,
what is undesirable and degrading. In Western culture,
ing about personal contact with the dead is often felt to
undesirable. In spite of the fact that 27 percent of an
erican sample studied by Greeley (1975) answered "yes"
the question "Have you ever felt that you were really in
ch with someone who had died?" only rarely were such
eriences told to professional people. In a British survey,
es (1971) contacted 277 widows and 66 widowers in
ected localities. Of this number, 94 percent were suitable
interview. Forty-seven percent of that sample reported
lucinations of the presence of a dead spouse. None of

them discussed their experiences with their doctors, and onl one out of 137 did so with a clergyman. The main reason fo not discussing the experience was fear of ridicule. It is likel that patients in our survey also had a negative response bia that is, they avoided telling medical personnel about "seeing apparitions of the dead. If this is so, our sample represent fewer survival-related apparitions than the number actuall experienced.

Another possible way in which cultural conditioning coul shape the data is through respondent bias. The medical ob servers might have reported what they believed they wer supposed to, according to cultural norms, and left out wha went against the grain of their particular culture. We foun no serious distortion in favor of the after-life hypothesis. O the contrary, we detected some under-reporting of those phe nomena which we hypothesize as being related to postmorte survival.

Our data came from interviews with physicians and nurse rather than with the patients themselves. This could introduc a source of bias in reporting and sampling. However, som studies by Moody and Kübler-Ross are based upon interview with patients. In Moody's (1975) account of the experience of resuscitated patients, he states that quite a few of these pa tients, while in a near-death state, became aware of th presence of deceased relatives as well as what we have calle religious figures "who apparently were there to ease ther through their transition to death" (p. 43). In a personal com munication Kübler-Ross (1976) has on the basis of her ex perience with terminal patients confirmed the mai characteristics of our own findings: a predominance of su vival-related apparitions, their "take-away" purpose, and pa tients' reactions of serenity, peace, and religious emotion.

The issue of survival after death obviously cannot b assessed solely on the basis of experiences of dying patient The entire range of other phenomena suggestive of an afte life—such as out-of-body experiences, reincarnation mem ories, apparitions collectively perceived, and certain kin of mediumistic communications—have to be considered t gether with the various explanatory hypotheses (other tha survival) that have been advanced (see, e.g., Hart, 195 1959; Murphy, 1961; Roll, 1974; E. M. Sidgwick, 1923; St venson, 1974a, 1974b, 1975; Tyrrell, 1953). Noyes (1972 Noyes and Kletti (1972, 1976), and Garfield (1975) ha published surveys of cases which involve deathbed expe es characterized by altered states, panoramic memories, also some phenomena similar to those covered in the ent report, but without having ascribed to them an after- interpretation. Discussion of the full range of data and ories related to the survival question does not fall into the pe of this paper.

e conclude our report on the cross-cultural survey of the eriences of dying patients by stating that the main findings consistent among the three surveys that have been con- ted in the United States and in India over a 15-year od. The central tendencies of the data support the after- hypothesis as it is formulated in the model we outlined fly earlier in this paper.

REFERENCES

Barrett, W. F. *Death-Bed Visions.* London: Methuen, 1926.

Garfield, C. "Consciousness Alteration and Fear of Death." *Journal of Transpersonal Psychology,* Vol. 7, 1975, 147-175.

Greeley, A. M. *Sociology of the Paranormal: A Reconnaissance.* Beverly Hills, Calif.: Sage Publications, 1975.

Hart, H. "Six Theories about Apparitions." *Proceedings of the Society for Psychical Research,* Vol. 50, 1956, 153-239.

Hart, H. *The Enigma of Survival.* Springfield, Ill.: Charles C. Thomas, 1959.

Hyslop, J. H. *Psychical Research and the Resurrection.* Boston: Small, Maynard, 1908.

Kübler-Ross, E. Personal communication, 1976.

Moody, R. W., Jr. *Life After Life.* Atlanta: Mockingbird Books, 1975.

Murphy, G. *Challenge of Psychical Research.* New York: Harper & Row, 1961.

Myers, F. W. H. *Human Personality and its Survival of Bodily Death.* London: Longmans, Green, 1903. 2 vols.

Noyes, R., Jr. "The Experience of Dying." *Psychiatry,* Vol. 35, 1972, 174-183.

Noyes, R., Jr., and Kletti, R. "The Experience of Dying from Falls." *Omega,* Vol. 3, 1972, 45-52.

Noyes, R. Jr., and Kletti, R. "Depersonalization in the

Face of Life-Threatening Danger: A Description." *P*
chiatry, Vol. 39, 1976, 19-27.

14. Osis, K. *Deathbed Observations by Physicians a*
Nurses. New York: Parapsychology Foundation, 1961.
15. Rees, W. D. "The Hallucinations of Widows." *Briti*
Medical Journal, Vol. 4, 1971, 37-41.
16. Roll, W. G. "Survival Research: Problems and Pos
bilities." *Theta*, 1974, 39-40, 1-13.
17. Sidgwick, E. M. (Mrs. H.). "Phantasms of the Li
ing." *Proceedings of the Society for Psychical Resear*
Vol. 33, 1923, 23-429.
18. Sidgwick, H., and Committee. "Report on the Cens
of Hallucinations." *Proceedings of the Society for Psyc*
cal Research, Vol. 10, 1894, 25-422.
19. Siegel, R. K., and West, L. J., eds. *Hallucinatio*
Behavior, Experience and Theory. New York: Wil
1975.
20. Stevenson, I. *Twenty Cases Suggestive of Reincarnati*
2nd ed. rev. Charlottesville: University Press of Virgin
1974.(a)
21. Stevenson, I. *Xenoglossy: A Review and Report of*
Case. Charlottesville: University Press of Virginia, 19
(b)
22. Stevenson, I. *Cases of the Reincarnation Type. Volu*
I. Ten Cases in India. Charlottesville: University Pr
of Virginia, 1975.
23. Tyrrell, G. N. M. *Apparitions*. London: Duckwor
1953.
24. West, D. J. "A Mass Observation Questionnaire
Hallucinations." *Journal of the Society for Psychi*
Research, Vol. 34, 1948, 187-196.
25. West, L. J., ed. *Hallucinations*. New York: Grune a
Stratton, 1962.

REINCARNATION RESEARCH: METHOD AND INTERPRETATION

C. T. K. Chari

The problems that exist in attempting scientific interpreta- on of the possible survival of the human personality after ath are, in some ways, compounded when an effort is made examine claims of reincarnation. The doctrines of reincar- tion, rebirth, and transmigration have long been part of rtain Asian dogmas, but can also be found in other parts of e world. In the United States, reincarnationist claims have und a relatively wide, if fluctuating, popular interest, as ell as recent scientific response. Professor Chari's paper als with questions of methodology and interpretation, par- ularly where reincarnationist research in Asia is concerned.

C. T. K. Chari, who holds a doctorate and Certificate in aining in Biology, was Lecturer at the American College in adurai, South India, until 1946; then, successively As- tant Professor, Associate Professor, and Chairman of the epartment of Philosophy and Psychology, Madras Christian ollege. Chari was selected by the University Grants Com- ission, New Delhi, for Research and Teaching, from 1969 1974, and has since been Honorary Professor, Research, adras Christian College. His reincarnation research has been ded by a grant from the Parapsychology Foundation.

Discussions concerning reincarnation require an exam- ation of some methodological problems and shortcomings, d I have discussed these earlier elsewhere.[1] My object in present paper is to show that a number of controversial t inescapable interpretations are linked with methodology ed in such research. I propose to deal with these matters by framing a series of questions and providing answers that deal with these questions, one by one.

The first question to be asked, from a scientific point of view, must be: *Is reincarnation a testable hypothesis?*

Belief in reincarnation—a belief that the soul returns Ayesha-like, again and again, to earth—is both ancient and widespread. Many African tribes, such as the Bantu and Zulu endorse it, as do Hinduism, Jainism, Buddhism, the Jewish "Zohar," the Druses of the Near East, and Western occultis movements including Allan Kardec's Spiritism, Theosophy and Anthroposophy. The question that confronts the parapsychologist today is whether the ancient and modern variants o the doctrine are testable on empirical grounds.

I agree with J. B. Rhine[2] that, in the present stage o parapsychological research, the hypothesis of rebirth in it various formulations (and by implication *all* survival of human personality after death) remains untestable. As th British parapsychologist Whately Carington once remarked the question whether Jones has survived death is vastly different from the question whether Jones survived a shipwreck In the terminology of the linguistic philosopher A. G. N Flew,[3] a "disembodied person" has come out of a differen "logical basket" from "corrupt person" or "young person and calls for an altogether different logic and conceptual array from that we use in everyday life. Reincarnationists d not escape the predicament. Between two "successive lives on earth the surviving "Theta" factor, as we may call it, mus exist in a disembodied or partly disembodied state. Hypotheses of "astral," "spiritual," "etheric," "subtle" bodies do n fit the framework of modern science or into our everyda languages.

As I view the problem, there are at least two good reason for deciding that reincarnation, in any formulation, is not a present scientifically testable. First, if we speculate by tryin to keep as close as we can to the reincarnationist cas material, we have to credit the surviving "Theta" factor (may be an ego or entity) with very extensive extrasensori (ESP) and psychokinetic (PK) powers. A very comprehensive psi theory of human personality is needed to arrange th alleged data, however crudely or tentatively. We have a fe limited and testable hypotheses about ESP and PK, but n theory extensive enough to carry the load of survival speculation.

Second, mind-body dualisms, in all their hitherto propose orms, are inadequate to survival research, as they would ave to be totally rephrased to be compatible with the exisence of psi capacities. Nobody seems to have managed the eshaping of the dualistic hypotheses in any testable fashion.[4] recognition defies solution in terms of space-time. To coneive of survival as a linear prolongation of the existence f "Theta" in space-time may be the crudest of blunders.

Let me make it clear that I do *not* dismiss the survival uestion as "meaningless" or "nonsensical," as some modern Vestern philosophers are inclined to do. I am only saying hat we have not *yet* been able to frame the question in a cientifically intelligible fashion. It is hardly surprising that, nder severe scientific and logical scrutiny, none of the atempted answers are either intelligible or testable. I am peruaded that survival research for the present remains the egitimate pursuit of a few parapsychologists. I hope that I m a humble member in their sparse ranks. As the Chinese roverb says, "we must continue to journey hopefully, even if e do not arrive anywhere."

Next: *Are the reincarnationist anthologies of the West conlusive?*

Empirical arguments for rebirth in the West ultimately rest n alleged instances of people, many more adults or grownps than children, who claim to "remember" their "former ves" in the normal, dream, hypnotic, drug, various trance ates or during psychiatric treatment. Either we have collecons of cases or cases of single persons apparently "rememering" one or more "earlier lives."[5] I am of the considered pinion that all these studies remain quite inconclusive; with e available data of psi research, we cannot rule out some ombination of the counter-hypotheses of hidden and disuised memories acquired in a normal fashion, extrasensorial elective tapping of the memories of others, and a psychomeic or psychoscopic ESP achieving a strong empathic identifiation with deceased persons and an apparent "resuscitation f memories" not belonging to the subjects in their normal ves. I have examined the counter-hypotheses singly and intly and conclude that a combination of them is not only easible but actually illustrated by the empirical data of survval research.[6] I refer interested readers to these papers of ine; no reincarnationist has replied adequately and at any ngth to my counter-arguments.

Third: *How plausible are current studies of Asian children ho have "claimed memories" of "earlier lives"?*

Dr. Ian Stevenson of the University of Virginia seems uneasily aware of the difficulty confronting the available reincarnationist anthologies of the West. While not abandoning the quest for reincarnation among the adults of the West, he has supplemented the approach by trying to compile, in a systematic way, perhaps for the first time in the history of reincarnationist research, cases of children in India, Ceylon, Burma, Lebanon, Turkey, and Thailand who have "claimed memories" of some "former lives." Twenty of these cases suggestive of reincarnation were published by the American Society for Psychical Research in 1966.[7] Stevenson plans to publish some thirty-five additional cases of the "reincarnation-type."[8]

What are some of the reasons dictating the choice of Asian children as the subjects of study? The discerning survival researcher can read several motives animating the pioneering research. In the first place, a three-year-old child is far too young to acquire much information about remote unknown persons and places in Asia through the usual media of communication of grown-ups, such as newspapers, the radio, the cinema, and carry such knowledge in the shape of buried and disguised "memories." Second, the occurrence of delusions and true psychotic conditions is rare in small children. Reincarnation fantasies in small children, who otherwise seem normal, intelligent, and cooperative, cannot be ascribed to hysterical dissociation or a split of personality. Third, a child who from early infancy talks, however haltingly, of an "earlier life," while retaining his normal consciousness withou apparent personality shifts, and uses the present tense with respect to "this life" and the past tense with respect to the "other life" cannot be readily assimilated to cases of mediums mentioned in Western Spiritualist literature as "possessed" by "spirits."

The children figuring in the Asian reincarnationist studies of Stevenson seem to claim an awareness of a psychic identity binding two "successive personal lives." Even the habit patterns, skills, likes and dislikes, phobias, scars or marks o injury on the skin appear sometimes to be a "carry-over" from the "earlier life." Fourth, these children, apart from their impressive and detailed "memories" of "another life," do not seem to exhibit any evidence for psi capacities. If th capacities exist, why do they manifest themselves in a masked way in isolated episodes in the lives of the children? Th "claimed memories" and correlated characteristics, in at leas few cases, appear to persist, negating the transience of the xperimental and spontaneous varieties of psi not involving urvival claims.

Lastly, it is Stevenson's contention that these cases of chil-ren in the Middle East, Southern Asia, and the Far East fall to a distinguishable class with certain overall "group char-cteristics," but showing also some variations according to so-o-cultural patterns of the subgroups. Stevenson posits a rcular relation between cultural beliefs and the occurrence f such cases. Belief increases the frequency of reported ases, by encouraging parents and others to talk fearlessly bout them without the inhibitions of a scientific and secular est. But without the actual cases there would be no viable elief or the cultural traditions built massively on it. Culture ay exercise a selective influence on the type of case (with r without "sex reversals" in "successive lives," with or with-ut "birthmarks" curiously reminiscent of "past lives," etc.), ut culture does not seem to generate or manufacture in a holesale fashion spurious cases. The persistence of the Theta" factor after death and its "reincarnations" must be ckoned with over and above all cultural beliefs and tradi-ons. I hope I have thus presented the case for Stevenson's mparative reincarnationist studies fairly.

Let us next ask: *How prone are Asian children to spon-neous and persistent fantasies of "former lives"?* Having esented the case for Stevenson's Asian studies, I must now hallenge his working hypothesis that culture exercises a se-ctive but not a generative influence on apparent cases of re-rth. Neither Stevenson nor his Asian collaborators, so far as am aware, have investigated and reported in detail cases of nall children having spontaneous, nonveridical fantasies of ormer lives"; that is, fantasies which are demonstrably nconscious or conscious fabrications, confabulations, al-ough displaying remarkable constancy of form and fea-res—persisting for weeks, months, and even years. I am rtunate perhaps in having had access to such material, ith the written firsthand testimony of parents, guardians, eir friends.

One of my cases is that of A.V.R. who was born on April , 1937, son of the late A. R. C., a former judge of the ndhra High Court and an Advocate of the Supreme Court Delhi after his retirement from the Andhra judicial service. r. Justice A. R. C. was a man of varied intellectual inter-ts, an omnivorous reader, and a person of high integrity.

During the last years of his life, he and I became very good friends. When his son, A. V. R., was an infant of a year and half, he began narrating, in a broken way, especially during meals when the father was present, scenes and incidents, apparently those of "another life." He seemed excited and interested and, for the most part, used the past tense about names, places, and details of "that life." Under my subsequent examination, he proved to be an eidetic, i.e., capable of having peculiar vivid images outlasting their stimuli. The boy's "visions" of "another life" continued for about five years, until he was seven years old. The resemblance to Stevenson's cases will be noticed. The father of the boy, the late Mr. Justice A. R. C., realizing the evidential importance of written records, filled several notebooks with all the boy said, incorporating even the child's scrawls and drawings. The records were in Telugu, a language I learned in my childhood spent in Andhra Pradesh, so I could read and understand these records very well. I spent a good part of a day over them and made my own notes of the case.

A. V. R.'s narrative included such details as the name of the town where he had "lived," of the railway station near his house, of the school where he studied, of his playmates and companions, also descriptions of the dress worn, of the parental occupations and pursuits, etc. After a very elaborate analysis, checking, and rechecking of the details of the fantasy, I satisfied myself that they were confabulations. A. R. C., before his death on February 19, 1966, after much discussion of the several questions involved, agreed that the fantasy was largely a compensatory displacement from this life, often a representation by opposites, a mental dynamism familiar to psychologists. It will suffice if I say that the descriptions of the town in the "other life," its atmospherics, vaguely suggested a place in North India, but its name had a Telugu stem and termination. Other minutiae, customs and practices, dietary peculiarities, were quite inappropriate to the north of India, but were part and parcel of South India.

A. R. C., after a frank discussion and probe, granted that the time of the infant son's fantasy coincided with a period in his own (the father's) life when he had an intense desire to find out the truth, if any, about the Hindu belief in reincarnation. The desire gradually lost its intensity, but the quest remained. It brought him to me. A. R. C. had studied most diligently the cases of rebirth occurring in the north of India. He received issues of the *Calcutta Psychical Bulletin* and

eral Indian spiritualist magazines. He read French and
s, for some years, coinciding again with the unfolding of
son's fantasy, a subscriber to *La Revue Spirite* and *Psy-*
ca. Before his death, he presented me with a large bundle
hese journals. Apparently, his intense quest for the truth
rebirth had sparked off the child's fantasy with its profu-
n of details, its suggestion of scenes laid in North India,
sustained constancy of form and content maintained over
rs. The narrative was not static (as many reincarnationist
emories" are) but unfolded in a dynamic fashion. The
ords were rich in scrawls and descriptions between August
1942, and January 18, 1943. Thereafter, the fantasy
eded or faded away. About the same time, the father, af-
much searching, became justifiably skeptical about the
nes of places and persons in the story.

A. V. R., the son, grew up into a perspicacious bachelor of
nmerce and a bachelor of laws and eventually a practicing
vocate. In 1964-65 he had forgotten his childish fantasy.
seemed amused by his father's interest, as I showed him
childish scrawls and stories. I gathered that A. V. R. and
sister were both eidetics, possessing, as their father put it,
almost "photographic memory."

suggest that a reincarnationist fantasy in a small Asian
ld starts typically in play or a gamelike situation. It is
moted or retarded by conscious or unconscious beliefs,
tudes, and responses of parents, guardians, interested by-
nders. We have here a remarkable Asiatic counterpart of
"imaginary playmate" or "fictitious companion" disclosed
Occidental studies of childhood. In a well-known case, Una
nt[9] had a secondary personality (no hysterical dissociation
s involved) she called "Una Mary." Una Mary's play-
e "Edward" was described with extreme richness, includ-
a dark blue Norfolk jacket he wore, his brown eyes, etc.
ether he was a purely imaginative invention or a com-
ite image of several loved and admired persons of real
dhood could not be determined. Stanley Hall is known to
e said that he would cheerfully trade the authorship of
two classical volumes on adolescence for Una Mary's
gination.

should be noticed that the typical Western childhood
asy of the "playmate" and its no less typical Asian coun-
art of an "earlier life" are not delusions or psychotic in-
ements. They are more like the hallucinatory games
cribed by W. Stern and other child psychologists.[10] Pos-

sibly, we have two ways of a child's reaching out to t world: one by *having* an idealized object (the imagina playmate) and the other by *being* an idealized object (a earlier life on earth). Milton H. Erickson mentioned the ca of a little girl who had an imaginary playmate she call "Booboo." She insisted on full respect being accorded to t "companion" by parents, friends, visitors.

Now, then: Are there seemingly "veridical" cases of "r birth" without any personal recall and/or personal recogi tion in the concerned Asian children?

Are there cases of Asian children who give verifiable d tails about an "earlier life" without any element of person recall and recognition, behavioral or otherwise? I know least one such case. And to me it is not at all surprising th it comes from a southern state of India. I refer to the case Sheela Ratna as reported by the late P. Sanjiv Rao.[11] Shee Ratna was a girl belonging to a Saraswat family of Ma galore. She was born, however, in Bombay on January 1 1932. In 1937, Sheela started telling her aunt and her gran father that she was having "visions" of the Lord Krishna. S visited the Anandashram of Swami Ramdas on October 1941, and again during December, 1941. She received t blessings and the advice of the Swami.

During her stay in the Ashram, Sheela talked about "vision" of Lord Krishna in which he had divulged certa details about her "earlier life." He vouchsafed the inform tion that, in that birth, she had been a Gowd Saraswat Bra min girl. Her father had been one Raghu Shenoy, and s had a brother who worked in the Tajmahal Hotel at Ma galore, while a sister had stayed in Mulki. In "that lif Sheela as she then was (Lord Krishna did not disclose h name in that birth) died of plague at the age of 14. All th details, completely unknown to Sheela Ratna, her fam circle, and her friends, were verified in what Sanjiv Rao co sidered a convincing fashion. He was a Burma Shell Offi not bereft of ordinary prudence. But I lament the genera lax standards in India. Few bother about rigorous proofs rebirth which is a cultural commitment (*pace* Stevenso even without proofs.

The case is most interesting; Sheela Ratna did not "reca or "recognize" *any* of the persons or circumstances associa with her alleged "previous life." It was Lord Krishna in "vision," who furnished the evidential details. Perhaps should tell Western readers that the *Bhagavad Gita* is the *classicus* of Hindu reincarnationist teaching. It is there t Krishna tells Arjuna, the Pandava warrior, that there are ay births and many deaths. Arjuna recollected them not; shna knew them all. It is clear that the socio-cultural in- nce is not only selective. It generates the whole plot, the sence or absence of personal recall, and much else besides. culture-bound nature of these phenomena was underlined en the "reincarnationist proofs" in this case were only chsafed after the girl's grandmother expressed her skepti- n about mere visions of Lord Krishna.

eincarnationists may contend that this was a genuine case reincarnation in which the verifiable details were clothed h a mythical form inhibiting personal recall and/or per- al recognition. But why should the mythical garb inhibit all or recognition? The evidence is not for inhibited recall l/or recognition but for their total absence. The case can- be treated as a case of autopsychic amnesia. Sheela's ne in the "previous life" was not given, but many details e furnished. But only after the girl's grandmother ressed skepticism about mere visions of The Lord were ns of "reincarnationist proof" provided.

et us now ask: *Are "mediumistic communication" and incarnation" mutally exclusive "all-or-none" phenomena?*

end with what I said at the start. No survival hypothesis s yet testable. We must await a generalized psi theory, as l as a generalized survival theory according to which ediumistic communications" and "reincarnations" occur as iables in a single comprehensive framework. Such recon- theories may not be testable, but they are worth seeking, least as alternatives to popular notions of "personal sur- al" and "reincarnation." The comprehensive theory of the ure may not at all be translatable into the comforting ths spun by various religions and cults. To an unsuspected ent, our ordinary notions of "survival" may be culture- und. The complex Indian data sometimes suggest that "per- al survival" and "reincarnation" are not "all-or-none" lanations, even for the single case. That some surviving s are not reborn while others are (according to their cul- al preferences?) is a commonplace of Occult teaching.

have in view a different possibility. The same psi-in- mational complex may be "projected" into space-time as a ediumistic communication," on the one hand, and as an hentic "reincarnation," on the other hand, according to the io-cultural setup. We may have in survival research something infinitely more perplexing than the electron which b haves sometimes as a "particle" and at other times as "wave," according to the experimental setup. The objecti reality may be neither. The late Mr. V. D. Rishi, the Indi spiritualist, mentioned a case in which a child appeared to the "reincarnation" of a certain deceased individual. But th same individual manifested also in a mediumistic communi tion. The explanation was given that while one *amsa* (aspec of the deceased "reincarnated," he existed in the "beyond" well. The enthusiastic worshippers of the Indian saint Sath Sai Baba hail him as an earlier saint, the Sai Baba of Shir reborn. But another saint with an alleged notable record "out-of-the-body" experiences claims to have met Sri Shi Sai Baba as a "spirit" in the "other world." If I may make o more daring proposal, it is that, in a case in which a deceas individual claims to have "reincarnated" somewhere on ear we should experiment somewhere else on earth and wait f the "electronic voice" or "Raudive voice" of the *same* ceased individual. Survival speculation goes beyond the boun of scientific testability. Our first semi-scientific guesses at t truth may have to begin by steering clear of the tranquilizi myths of *homo sapiens* whose pilgrimage to find out his d tiny has hardly begun.

REFERENCES

1. C. T. K. Chari, "Foreword I" to Dr. Ruth Reyna, *Re carnation and Science*. New Delhi, India: Sterling Pu lishers Private Ltd., 1973.
2. J. B. Rhine, "Telepathy and Other Untestable Hypot ses." *The Journal of Parapsychology*, Vol. 38, 19 137-153.
3. A. G. N. Flew, "Psychic Perplexity." *The Astrologi Magazine* (Bangalore, India), Vol. 40, 1951, pp. 3 345.
4. C. T. K. Chari, "Some Generalized Theories and Mod of Psi: A Critical Evaluation," in *A Handbook Parapsychology*, ed. Benjamin G. Wolman. New Yo Van Nostrand Reinhold Co., 1977.
5. Miscellaneous collections of cases are found in R. Sh ley, *The Problem of Rebirth*. London: Rider, no date; Delanne, *Documents pour servir à l'Etude de Réincarnation*. Paris: Editions B. P. S., 1924; Dr.

Encausse's (Papus's) *Reincarnation*. London: Rider, no date, extracts some case material from a report by Delanne. A representative collection of cases from the West, Middle East, and Asia has been edited by Martin Ebon with an excellent introduction, *Reincarnation in the Twentieth Century*, revised edition (a Signet Book), New York: New American Library, 1970. Reincarnationist views held by celebrities, interspersed occasionally with accounts of *déjà vu* experiences and of apparent "memories of earlier lives," will be found in Joseph Head and S. L. Cranston, eds., *Reincarnation*. New York: Julian Press, 1961; Eva Martin, *Reincarnation*. New Hyde Park, New York: University Books, 1963; E. D. Walker, *Reincarnation*. New Hyde Park, New York: University Books, 1965. Gina Cerminara's well-known trilogy published by William Sloane Associates, *Many Mansions* (1956), *The World Within* (1957), and *Many Lives, Many Loves* (1963) is based on Edgar Cayce's "life-readings." The Cayce material will be found also in the issues of *The Searchlight* published by the Cayce Foundation, Virginia Beach.

C. T. K. Chari, "Regression 'Beyond Birth'." *Tomorrow*, Vol. 6, 1956, pp. 87-96 (a critical estimate of the techniques of hypnotic regression used to evoke "memories of earlier lives"); "How Good Is the Evidence for Reincarnation?" *Tomorrow*, Vol. 10, 1962, pp. 84-98 (a discussion of some earlier Indian cases like that of Shanti Devi and analysis of the distribution of the cases); " 'Buried Memories' in Survivalist Research." *International Journal of Parapsychology*, Vol. 4, 1962.

Ian Stevenson, "Twenty Cases Suggestive of Reincarnation." *Proceedings of the American Society for Psychical Research*, Vol. 65, 1966.

Ian Stevenson, *Cases of the Reincarnation of Type, Vol. I, Ten Cases in India*, 1975; Vol. II, *Ten Cases in Sri Lanka*, and Vol. III, *Fifteen Cases in Thailand, Lebanon and Turkey* are in the press. Virginia: University Press.

Una Hunt, *Una Mary*. New York: Chas. Scribner's Son, 1914.

W. Stern, *Psychology of Early Childhood*, rev. ed., London: Allen & Unwin, 1930; A. T. Jersild, *Child Psychiatry*. New York: Prentice Hall, Inc., 1954; L. J. Stone and J. Church, *Childhood and Adolescence*. New York: Random House, 1957; D. W. Winnicott, *The Child and*

the Family. London: Tavistock Publications; M. Bre
enridge and E. Lee Vincent, *Child Development*, 4th
Philadelphia: W. B. Saunders.

11. P. Sanjiv Rao, "Sri Sheela Ratna." *The Vision*, Vol.
March, 1943, pp. 193-200.

VI.

CONSCIOUSNESS AND PARAPSYCHOLOGY

HYPNOSIS AND OBJECT ASSOCIATION

W. G. Roll

Mr. Roll, Project Director of the Psychical Research Foun- ation, Durham, North Carolina, is well known for his re- arches in phenomena suggesting survival of the human ersonality after death as well as for extensive studies in pol- rgeist phenomena; the latter work is represented in his book he Poltergeist *(1972). He is the editor of* Theta, *a quarterly ublished by the PRF, Durham, North Carolina 27706. Roll lected his paper on the work of Gustav Pagenstecher, as it eals with problems of special interest with him, notably those nking psychological elements with physical happenings. As e notes, physical aspects may "in some sense retain traces of ast events" and this factor "might aid our knowledge of other productive processes in nature, such as those of memory nd heredity." This paper originally appeared with the title Pagenstecher's Contribution to Parapsychology" in the* ournal of the American Society for Psychical Research *ol. 61, No. 3, July, 1967). Mr. Roll has written an addi- on to his concluding section to his paper for publication in is volume.* The original text was copyright © 1967 by the merican Society for Psychical Research, Inc.

Now and then a discovery in parapychology is made in ome part of the world which never previously distinguished self in the field. This happened a few years ago when the zechoslovakian investigator, Milan Ryzl, announced the artling ESP results of his subject, Pavel Stepanek; it hap- ened some forty years earlier when Gustav Pagenstecher, a erman physician practicing in Mexico, reported on the ESP feats of a woman patient, Señora Maria Reyes de Z. (Mrs Zierold).

The scientific world probably would not have heard abou either of these exploits had they not been authenticated by an experienced psychical researcher who personally undertook an investigation. In the Czechoslovakian work, the visiting scientist was J. G. Pratt. In the Mexican case, he was Walter Franklin Prince. The resemblance appears to end there: one case consisted of statistically evaluated card-guessing trials, while the other involved "psychometry" tests, where the subject had visions seemingly related to the past histories of objects she held in her hands. When we look behind the different experimental settings, we find that two important features of Ryzl's experiments were anticipated by Pagenstecher. They concern the nature of ESP stimuli and a method for training subjects to respond to them. I shall return to these topics later. First a few words about Prince and Pagenstecher.

Prince was in his late fifties when he visited Mexico in 1921. He was a minister by education and it was his pastoral work that led him to parapsychology. The occasion was his discovery, in 1910, of a case of multiple personality in a young woman parishioner, Doris Fischer. His study of the "Doris Case" resulted in his acquaintance with James H. Hyslop, founder and head of the American Society for Psychical Research. When Hyslop died in 1920, Prince became Research Officer of the A.S.P.R. and then of the Boston Society for Psychic Research. He remained America's most outstanding figure in psychical research until his death in 1934.

Prince had two traits essential for an investigator in this field: he was open-minded about the possible range of facts in nature and hard-headed in their appraisal. Both traits are conspicuous in his accounts of the experiments in Mexico.

Pagenstecher was born in Germany in 1855 and received his medical degree at the University of Leipzig. Shortly afterwards he left for Mexico, which was his home until he died in 1942. It was no rash youngster, therefore, who threw himself into the uncertain area of psychical research, but a man in his sixties and a respected member of the medical profession. Pagenstecher said he had been "a materialist for forty years" when he had his first encounter with the paranormal, but he cannot have been a conventional one or he surely would have ignored it. That he also was not a conventional physician is indicated by his use of hypnotic therapy, hardly an orthodox medical procedure at that time. It was his hypnotic treatment of Mrs. Zierold for insomnia that led to the discovery of her remarkable psychical gifts.

The main sources of information about the experiments with Mrs. Zierold are Pagenstecher's monograph, "Past Events Seership: A Study in Psychometry," which came out as a volume of the A.S.P.R. *Proceedings*,[11] Prince's Foreword to it, and two papers by him, one in the *Proceedings*,[12] and the other in the *Journal*,[13] both entitled "Psychometric Experiments with Señora Maria Reyes de Z." In these, Prince discussed the tests in which he personally took part. An article by Pagenstecher[10] which appeared in the *Journal* in 1920, concerning the tests which were carried out in collaboration with a medical commission in Mexico, was incorporated into his monograph.[11]

The experiments were concerned with a form of ESP called "psychometry," which means, literally, "soul measurement." Since the word also refers to psychological measurements and tests, the phrase "token object test" is now often substituted to avoid confusion. In the usual kind of token object experiment, the subject tries to obtain ESP impressions about events, as a rule in the past, by means of objects which were associated with the events. The tests resemble psychological word association tests, except that the stimulus is a material object rather than a word; and except that the investigator is interested in the object's parapsychological associations rather than the psychological ones it arouses in the subject's mind. Pagenstecher applied the term "associated objects" to the objects used in such tests. We might refer to this kind of ESP as "object association" phenomena, a more descriptive phrase, perhaps, than either "psychometry" or "token object" phenomena.

Pagenstecher was not the first to become interested in object association. A physiologist, Joseph R. Buchanan, preceded him by nearly eighty years and, in 1842. coined the term "psychometry." Pagenstecher refers to his work and to that of his follower, the geologist William Denton. Their treatment of the phenomena was more poetic than scientific, as the titles of their books indicate: Buchanan's *Psychometry: The Dawn of a New Civilization* (1893) and Denton's *The Soul of Things* (1888). Neither of them was taken seriously by the scientific community, not even by its fringe of psychical researchers. This is not to say that psychometry was entirely overlooked. F. W. H. Myers[8] and Oliver Lodge[6] suggested that past events left "traces" on objects in their neighborhood and that these traces can be detected by gifted ESP subjects. Though many mediums and sensitives use such objects, parapsychologists as a rule have tended to restrict themselves to acknowledging the existence and possible importance of the objects without trying to account for their function. S. G. Soal,[24] for instance, concluded from his work with the sensitive Blanche Cooper that if there is ESP, there is a "physical link," but he did not venture an explanation. Pagenstecher, as we shall see, was less reticent.

The Experimental Conditions

The bulk of Pagenstecher's monograph[11] is taken up with a description of forty miscellaneous experiments conducted between October 1, 1919, and June 15, 1920. The last of these is numbered 65, so presumably another twenty-five tests were conducted during that period but not reported.* In addition, fifteen (unnumbered) experiments done in January, 1920, are discussed. Eleven of these were conducted in collaboration with other Mexican physicians. Finally, two experiments were done on August 24, 1920, and March 30, 1921. Prince[12] describes an additional twenty-six experiments in which he participated between March 29 and April 14, 1921, one of which is also covered in Pagenstecher's report. Altogether, eighty-two experiments are discussed in these two papers.[11,12]

In 1920, many of the procedures of testing and analysis which today are applied as a matter of course had not been developed. Parapsychological studies were concerned more with the question of fraud than with experimental procedure A good investigator was well versed in the skills of the magician and detective rather than in the methods of experimental science. Prince was well known for his exposures of mediums *in flagrante delicto* and the main question in his mind when he arrived in Mexico was whether the claims were fraudulent I think we can agree that they were not. But we should no

---

* The numbering of the experiments is somewhat erratic. In one case, three experiments with one object were counted as a single experiment (No. 26); in other cases, four experiments (Nos. 17-19 23) and two experiments (Nos. 39 and 40) with the same object were numbered separately.

pect either Prince's or Pagenstecher's tests decisively to rule
t all other possible normal explanations.

In any satisfactory modern ESP experiment, the experi-
enter and others who are present in the room where the
bject is tested are ignorant of the target. In this way the
ssibility is avoided that they might unconsciously transmit
es to the subject. In many tests with Mrs. Zierold, Pagen-
cher, Prince, or others who were present, knew what the
rrect response was. While it is doubtful that they gave her
y cues, these experiments cannot be bracketed with
earch conducted under conditions that definitely rule out
s possibility. Similarly, in token object tests precautions
ust be taken to prevent the subject from inferring any rele-
nt information from the object's physical characteristics.
r instance, if the subject is handed a sea shell, he is certain
score some "hits" if he speaks about the ocean and marine
e. It is now also customary to have a predetermined num-
r of experiments and analysis of all the findings.

It is emphasized both by Pagenstecher and Prince that
s. Zierold did not examine the experimental object either
sight or by touch. Once her fingers came in contact with
she did not move them for the duration of the test. In fact,
e entered a cataleptic trance as soon as she received the ob-
t, which lasted until the end of the session.

In several instances, the particular events described by Mrs.
erold, and later found to have been associated with the ob-
t, could not have been rationally inferred even if she had
amined it. For instance, the fact that a sealed letter had
en written by a tall man, thirty-five to forty years old,
arded, with a scar over his right eyebrow, and who was
out to be shipwrecked, could not have been inferred from
e letter. This was the famed Ramon experiment[12] conduc-
l on March 30, 1921, which was witnessed by Prince and
. L. S. Viramontes, Secretary of the Medical Society
edro Escobedo." They and the other persons present were
orant of the writer and the contents of the letter.

One series of experiments closely approached present-day
entific standards. These were the tests done on January 11,
20, with Viramontes as co-experimenter. Four similar
mice stones with different past histories were presented to
s. Zierold in random order by Viramontes without Pagen-
cher knowing which stone was being used at any one time.
all instances, Mrs. Zierold's statements were appropriate. I
ll discuss these experiments later. This series was followed

by a similar one conducted under the supervision of t President of the Medical Society, Dr. Luis Iruesto, t Treasurer, Dr. Rafael Lopez, and Dr. Viramontes. It was t purpose of these tests to obtain as exact a replication as po sible of the earlier findings; consequently the same pumi stones were used as had been employed in the tests with V ramontes (in addition to three control stones). Mrs. Zierc gave essentially the same responses as before. Unfortunate in the commendable search for a repeatable experiment, t experimenters overlooked the possibility that Mrs. Zierc could have recognized the stones by touch and repeated h earlier statements about them. The stones were cut into sim lar shapes, but it is difficult to rule out the possibility of slig differences.

It would be a mistake to judge the tests with Mrs. Zierc on the basis of how conclusively they demonstrate ESP. T day, the greatest need is not for further evidence of the ex tence of ESP. Although we have advanced far in providi sound methods of testing, our progress in understanding E has been slow and the question how ESP operates is pressing now as it was in the days of Pagenstecher a Prince. I believe that their experiments with Mrs. Zierold m give valuable leads about the nature of ESP, though they ca not be cited as proof of it. In particular, the tests make sor interesting points about two topics, namely, the role of hy nosis in ESP and the nature of the ESP stimulus.

Hypnosis and ESP

Mrs. Zierold's ESP abilities were discovered by Page stecher in the course of treating her for insomnia. She s fered severely from this as a result of a stomach ulcer and an aftereffect of an operation. It was when Pagenstecl failed to relieve the insomnia with drugs that he resorted hypnosis.

During one of the early sessions, in September, 1918, M Zierold was disturbed by the impression that her fifteen-ye old daughter was eavesdropping outside the room. Wh Pagenstecher checked, he found this was true. Until t time, Mrs. Zierold was unaware of possessing any psychi abilities. Her ESP developed gradually during the course an hypnotic training program which lasted for several we and, with respect to some of her abilities, for several mon

ne first object association test was done more than a year
ter the initial hypnosis session.

There is an interesting account, written by Mrs. Zierold
rself, about the development of her gifts. It appears that
genstecher used an hypnotic training procedure designed to
velop her mental images. At first, he instructed her to visu-
ze himself in various parts of the room, out of her sight.
rs. Zierold writes: "I began to see, upon order, first a kind
shadow corresponding to the body of the doctor; later on I
as able to see him with absolute clearness, whether I was
indfolded or not, and whether he was standing in front of
e or at my back, or even behind the door as it happened sev-
al times."[11] Pagenstecher does not make any claims for this
a general procedure for developing ESP. However, it bears
striking resemblance to Milan Ryzl's hypnotic training tech-
que which, he claims, has been successful with many sub-
cts. Ryzl describes it as follows:

> We ask the subject to distinguish simple objects of set shapes—key, hand, scissors, hammer, etc., which we put in front of him on a tray in a position that the subject could see them if he opened his eyes. We invite the subject to "have a look" at the object without opening his eyes . . . . Usually there is only gradual progress. The subject first "sees" the object indistinctly, blurred, as if in a fog. At this stage the experimenter's suggestive influence may be of considerable help, an order or an assurance that the picture must gradually get more distinct.[18]

Ryzl used this method with 226 subjects, 13 of whom (6
rcent) achieved a high rate of ESP success while another
were "relatively good."[18]

In the case of both Pagenstecher's and Ryzl's subjects,
ere was a gradual development of clarity in the mental
ages. Mrs. Zierold first saw a "kind of shadow," while to
zl's subjects the target appeared "as if in a fog." Gradually
images became more distinct. There has been much
culation whether Ryzl's method has general validity or
ether his success is due to personal factors. The fact that a
nilar procedure was used by another investigator argues in
vor of this form of hypnotic training.

After the initial training period, the procedures followed by

Pagenstecher and Ryzl differ markedly. In Ryzl's experimen with Stepanek[20,21] the responses were limited to two, namel calls of "white" or "green," corresponding to the colors of th target cards. In Pagenstecher's experiments, on the other han anything Mrs. Zierold said regarding the experimental obje counted as a response. The target range was limited only b the past history of the object. And there was a further di ference: Mrs. Zierold continued to operate in a trance sta and did not, as far as we know, show evidence of ESP unle hypnotized. Stepanek, on the other hand, is not in tran when tested either by Ryzl or by other investigators visiti Prague. (It is conceivable that he automatically enters a hypnotic state when he begins guessing but, as far as I kno there is no evidence for this.) Since this difference betwe the psychological states of the two subjects may tell us som thing about the relationship between hypnosis and ESP, may be worth discussing further.

From the beginning of research in parapsychology, ma investigators have been of the opinion that hypnosis, sleep, other forms of dissociation are important means of improvi ESP. In the experience of others, however, hypnosis and d sociated states have been ineffective. In her survey of t older experimental material, Rhea White[29] concluded th the "first general requirement is to achieve a state of co plete relaxation." In the area of nonexperimental ESP expe ences, L. E. Rhine[15] observed that "realistic" cases, in whi there was the closest correspondence with the events, usua occurred in dreams rather than in waking states. (On t other hand, she did not find any more ESP cases in drea than in waking states, perhaps because most dreams are fo gotten.) Gardner Murphy[7] suggests that dissociated sta are helpful to ESP because they remove the subject from "t conscious system of ideas." On the other hand, J. B. Rhin has not found hypnosis to be an aid to ESP. Neither high-scoring subjects nor those of S. G. Soal[25] were hy notized. Hoping to duplicate Ryzl's findings, John Beloff a Ian Mandleberg[1] trained and tested twenty subjects und hypnosis without effect. (However, Ryzl[18] claims hi scores in only 6 percent of his trained subjects. Beloff a Mandleberg could therefore only have expected striki results from one of their subjects.) Also in the tests by J. Grela,[3] there was no evidence that hypnosis was effective improving ESP. Although the total score was highest in sessions in which positive hypnotic suggestions were giv

ly five of the eleven subjects scored higher in the hypnosis
ts than in the waking tests, five scored lower, and one the
ne.

A clue to this apparent disagreement is found when we ex-
ine the responses made by the subjects in the two situa-
ns. The investigations in which hypnosis or some other
m of dissociation were found to be advantageous were, as
rule, free response tests, while the experiments in which
pnosis was ineffective were card trials or other tests with
tricted responses. There are exceptions to this, but the rule
ems to be that dissociation is likely to improve results in
ee response tests but not in card tests. Since the response is
function of the ESP target, the choice of target, it appears,
ould determine whether the subject should be in a dissoci-
d state such as hypnosis or sleep. One of the reasons for
successful outcome of the experiments by Montague Ull-
an, Stanley Krippner, and Sol Feldstein[27] might well be
at they used a free response method with dreaming sub-
ts.

The reason that free ESP responses are aided by dissoci-
d states and restricted responses are not, can be under-
od, in my opinion, by a study of the ESP response itself.
I have tried to show elsewhere,[16] the response produced
an ESP percipient consists of *his own* memory traces, ac-
ated by the ESP stimulus. An example may help to illus-
te this. In an informal session with a medium, Herbert
yer, involving Dr. O. Lee Trick and others, Mr. Beyer
ed if the name "Othol" meant anything. Dr. Trick replied
at his first name is "Otho," but that he does not use this
me except for professional purposes and that he believed
at none of his friends in Durham knew what the initial "O"
his name stood for. When the medium was asked how this
me came to mind, he replied that he had an image of a
ildhood friend named Othol Johnson and that this made
n expect that this name was relevant.

René Warcollier, the French parapsychologist, described
ESP process in this way:

> . . . the images which appear to the mind of the percipient under the form of hallucinations, dreams, or more or less well-formed images, spring exclusively from *his own mind,* from his own conscious or subconscious memory. *There is no carrying of the visual impression from the agent to the percipi-*

> *ent*, any more than there is actual carrying of a letter of the alphabet from the sending apparatus of a telegraph office to the receiving office. The transmission of the message consists in making the same letter *appear*, but it already *exists* at the receiving apparatus, along with all the others, before the transmission takes place.[28]

If the ESP response is a form of remembering, it is easy t
understand why a dissociated state might help subjects suc
as Mrs. Zierold and those to whom Rhea White[29] refers. A
a rule, it is only when the distractions and demands of ever
day life are shut off that the wide range of memory trac
which would be needed to respond to a wide range of ES
stimuli easily come to mind. On the other hand, a perso
need not be in a dissociated state to recall, say, images
"green" and "white" or of the five ESP symbols. Cons
quently, Stepanek and other card-calling subjects do not hav
to be hypnotized. These common-sense observations about th
effect of hypnosis on remembering are supported by exper
mental observations. For example, R. W. White, G. F. Fo
and W. W. Harris[30] and B. G. Rosenthal[17] found no in
provement under hypnosis of recall of lists of nonsense syll
bles, but a significant gain for meaningful material. Th
apparent conflict between those who advocate hypnosis a
other forms of dissociation as aids to ESP and those who fi
them ineffective seems to be resolved if we regard ESP
sponses as memory responses.

A few words might help to relate these observations to t
hypnotic training techniques of Pagenstecher and Ryzl. Fi
of all, it is evident that hypnotic training is not a mea
whereby everyone can become a star ESP subject. Mrs. Z
rold showed evidence of ESP during an early hypno
session before Pagenstecher's training began, and only a sm
proportion of Ryzl's trainees developed a stable ESP perfor
ance. The contribution of these investigators appears to
the discovery of a method to teach their subjects (a) to tra
form indistinct and fleeting memory images into clear men
images, (b) to identify images brought into awareness by
dinary internal or external stimuli, presumably by recogniz
these stimuli, and (c) to ignore such "normal" images, le
ing a residue of "paranormal" ones. In addition, in the l
ited case of free response tests hypnosis or self-induced fo

dissociation are likely to provide a means for gifted sub- ts to maintain a high level of ESP performance.*

The Stimulus

The psychometric process begins, according to Pagen- cher, when ordinary physical events produce “molecular vements” or “vibrations” of light, sound, etc., which usu- y result in sensory perception. When these vibrations reach ysical objects in the neighborhood of the events, the vibra- ns are not dispersed and do not disappear, but are “stored” the objects. At a later time, these stored vibrations may af- t the brain of an ESP subject and cause him to have a ntal image of the events in question. Pagenstecher refers to accumulation of stored vibrations in the universe as a vine or cosmic memory record.”[11] Raynor Johnson, the stralian physicist and author, similarly says, in a discussion psychometry, that “rocks cannot remember—but they may d a memory . . . which the mind of a man in favorable cumstances can cognize.”[5] The discovery that the past is ained not only by animate systems but by inanimate sys- ns as well, would add to the growing list of properties in living which are also found in the world of inanimate tter.

But before we can begin to take such speculations seri- ly, we need to know if Pagenstecher's results can be ex- ined along more conventional lines. If they cannot, we uld need to know if the findings have been repeated by ers. Most important, the new concept should improve our lity to control or predict ESP.

When Prince became convinced that the results were not to explained in terms of cheating or some other normal ex- nation, he turned to the telepathic hypothesis, e.g., to the ory that Mrs. Zierold responded to information about the erimental object in the minds of the experimenters rather n to any unknown properties inherent in the object itself.

Hypnosis has other uses for ESP. For instance, alternating notic and waking card trials has resulted in the “preferential ct” in which the condition preferred by the subject produces a itive score and the other a negative one. Hypnosis may also be elp for subjects who otherwise would find the experimental ditions unpleasant or distracting.

Prince gave up the telepathic hypothesis when he found th
it made no difference to Mrs. Zierold what information,
any, the experimenters had about the object. Prince was
experimenter on two occasions when Mrs. Zierold's sta
ments about the experimental object were in conflict with
own opinions and when he thought she had failed in the te
In both cases it turned out that it was he and not Mrs. Z
rold who was mistaken. He concluded from this that she
not reading his mind. In addition, there were cases where
one present had the information that Mrs. Zierold produc
such as the Ramon case referred to above.

It would be going too far to say that these experime
conclusively excluded telepathy since there was always so
person somewhere who would eventually verify Mrs. Ziero
statements and whose mind she could therefore have pic
at the time of the test. However, in the case of telepa
there is usually a pre-established link between the agent
the percipient; for instance, they are personally acquain
or the connection is through a token object. If there is
dence of ESP without such a relationship, then I think
may agree with Pagenstecher and Prince that we are pro
bly not dealing with telepathy.

Prince does not discuss the possibility that clairvoyanc
ESP of objective, physical events—might explain the findi
It is evident, however, that it could not since Mrs. Zierold
not describe contemporary events, but events that occurre
the neighborhood of the object in the past.

G. N. M. Tyrrell[26] referred to object association as
"almost untouched" area of parapsychology which mi
have important implications for the understanding of E
The only person other than Pagenstecher to make a sign
cant contribution to this area was the French investiga
Eugene Osty,[9] a contemporary of his and also a physic
The phenomenon is now again attracting the attention
parapsychologists. An experiment by Ryzl and Pratt[2
particularly interesting because the effect was not sought,
emerged unexpectedly. In this series, in addition to Stepan
usual high rate of scoring, it was found that the
were not uniformly or randomly dispersed over the ta
cards, but were concentrated on certain ones, though th
appeared to be physically indistinguishable from the
Among the favored cards, two were found which had slig
different past histories from the other cards. These two c
corresponded to the first two numbers on the code sheet

erimenters used for marking the envelopes in which the
ds were placed and for that reason may have been more
idly impressed on their minds than the others. The authors
arked in a later study that "our results seem to us to raise
w the question whether the so-called token object, long as-
iated with mediumistic practices, may play more than a
ely motivational or suggestive role. . . ."[21] In other ex-
iments with the same subject, it appeared to Ryzl[19] that
panek's own guess about a card left a "trace" on it to
ich he responded in later trials by repeating his first guess,
ardless of what the actual target was.

The best indication that a scientist has made a new discov-
is that it increases his ability to predict and control. In
following pages I shall consider Pagenstecher's findings
m this point of view. I shall not discuss his theory of
ored vibrations." His findings about the "associated object"
be stated in terms of what we might call the "object asso-
tion theory of ESP" without going into the possible physi-
grounds for this theory.

The Object Association Theory of ESP

At the beginning of this paper I pointed out that object as-
ciation experiments are similar to word association experi-
nts. In some word association tests, the purpose is to
cover the connections between thoughts and images in the
ject's mind. For instance, the stimulus word "table" might
cit the response "chair," thereby showing a relation in the
ject's mind between table and chair. Pagenstecher's experi-
nts suggest that material objects are associated with each
er in ways analogous to the association of ideas and that
ilar "laws" govern the two kinds of association.

The psychological laws of association are divided into the
imary" and "secondary" laws of association, the former
ng the laws of contiguity and similarity and the latter the
s of primacy, recency, frequency, and vividness. Of the
mary laws, I shall discuss only the law of contiguity.

e Primary Laws of Association

The Law of Contiguity: The law of contiguity states that
en two experiences have occurred together in time or

place, the occurrence of one of them in perception or thou
tends to bring the other to mind. "The burnt child dreads
fire," as the proverb has it. The phenomenon of object ass
ation suggests a parapsychological equivalent to this law.
cording to what we might call the "parapsychological law
contiguity," two objects or events that have occurred toget
in time or place remain parapsychologically associated tho
they may later be separated, so that if one of the objects
presented to a person, the other comes to his mind. Pag
stecher's experiments all conform to this law. For instar
in Experiment 62, conducted on May 13, 1920,[11] the exp
mental object was a string on which the identification p
belonging to a German ex-sergeant had been attached. It
been worn by him during World War I. When Mrs. Zier
held the string, she had a vision of a fire bomb explod
among a group of soldiers. The sergeant recognized this ev
as the one that had impressed him most during the war. T
example is typical. As in all the other of Pagenstecher's
periments, the response concerned events that had ta
place in the immediate vicinity of the experimental obj

The Secondary Laws of Association

The objects used in Pagenstecher's experiments had m
events associated with them in addition to those described
Mrs. Zierold. For instance, in the experiment with the id
tification string, the question arises why she described
bomb explosion rather than something else. Similarly, in
case of the association of ideas. one word or image often
several others connected with it. The word "table" may be
sociated with "chair," "lamp," "typewriter," "ashtray,"
the names of other objects which have been observed in
proximity of tables. If the investigator is interested in wh
of these related words are likely to come to mind first, he
refer to the secondary laws of association: the laws of
macy, recency, frequency, and vividness. Thus, if the sub
in the past has more frequently experienced the combinat
"table-chair" than the combination "table-lamp," he is m
likely to say chair than lamp in response to the stimulus w
table, assuming that other factors, such as recency, are ab
the same for the two combinations.

In object association, the question which of the events as
ciated with the experimental object are likely to be cogni
by an ESP subject is answered by the parapsycholog

uivalents of the secondary laws of association. We may press these as follows: According to the law of primacy, all her things being equal, the first events in the history of an ject are more likely to be cognized by ESP than others. e law of recency states that, all other things being equal, cent events in the history of an object are more likely to be gnized by ESP than others. The law of frequency says that, other things being equal, frequent events in the history of object are more likely to be cognized by ESP than others. d finally, according to the law of vividness, all other things ing equal, events that were emotionally vivid or intense to person connected with the history of an object are more ely to be cognized by ESP than others.

In Pagenstecher's experiments, sixty-two different objects re used.* These include the objects from the tests with

---

* Thirty-seven different objects were used in the tests Pagen- cher conducted on his own, four in the experiments with Vira- ntes, and twenty-one in the tests where Prince participated, king a total of sixty-two. It is clear from Pagenstecher's mono- ph[11] which of his forty experiments involved the same objects. the case of the four objects used by Viramontes, it is obvious t none was used more than once. With regard to the experiments which Prince participated,[12] the situation is confusing since one ject had been used earlier by Pagenstecher and is reported in monograph,[11] two had been used by Pagenstecher but are not orted by him, and three were used more than once in Prince's periments, but in different parts of the series.

An artificial flower which Pagenstecher had used in a previous periment[11] was the "satin bow" in a test with Prince;[12] this has n counted with Pagenstecher's objects, not with Prince's. There re two objects used by Prince which reportedly had been em- yed previously by Pagenstecher, namely, an ivory paper cutter[12] l one of two letters which had been written by Pagenstecher nself after a shipwreck.[12] Pagenstecher does not refer to these eriments in his monograph,[11] but he told Prince that Mrs. rold's response in the later tests to each of these objects was ilar to the response she had made earlier. Since the responses these two objects are only to be found in Prince's records, I e counted them with Prince's objects. Finally, in three instances same object was used twice in different parts of Prince's ex- iments, namely, a piece of marble,[12] a pumice stone,[12] and a t.[12] The pumice stone had been cut the second time it was d, and a different (bloodstained) part of the shirt was held by s. Zierold the second time this was given to her. On the first asion she apparently received impressions from a cloth mill mary events) and the second time from an assault on the man

Prince and Viramontes, but not from the tests done with t medical commission since the same objects were employed them as had been used in earlier trials. If we examine M Zierold's responses, in many cases they appear to follow t secondary laws of association, particularly the laws of p macy and vividness.

In Table 1, I have entered Mrs. Zierold's responses a cording to whether the events she described were primar vivid, etc. To some extent, the decision where to place item was subjective.

Table 1
Classification of the Subject's Responses According to the Type of Event Described

One-Response Sessions

Primary	Recent	Frequent	Vivid*	Unclassifiable	Tota
21	0	6	11	15	53
40%	0%	11%	21%	28%	

Two-Response Sessions

Primary & Recent	Primary & Vivid	Recent & Frequent	To
2	3	4	
22%	33%	44%	—
		Total, all sessions:	6

* One of the "vivid" events was also "frequent."

However, if the response did not clearly belong in one these categories, it was listed as "unclassifiable." The table divided into two sections, one referring to the objects whi

---

who had worn the shirt (vivid events). I counted the shirt as c object giving rise to two different responses. The pumice stone a the marble were also counted once. An experiment with a differ specimen cut from the same shirt[12] was counted as a differ object.

The frequent use of the same object may give the impressi that the experiments were more informal and haphazard than v actually the case. The repeated use of stimulus objects was usua intended to demonstrate repetitions in the response and there to provide repeatable parapsychological effects.

mulated a single impression or one continuous account, re-
red to as "one-response sessions," and the other referring
those which gave rise to two unrelated responses, the
vo-response sessions."

Primary Events: In twenty-one of the fifty-three one-re-
onse sessions, or 40 percent, Mrs. Zierold referred to the
t events in the history of the experimental objects. Five of
nine two-response sessions (55 percent) also included
erences to primary events. It was Pagenstecher's theory
t if no strong emotions were associated with an object, its
riginal impressions" would come to the fore. As mentioned
ove, some of these cases are weak from the evidential point
view since it is difficult to be sure that Mrs. Zierold did
learn by normal means something about the origin or
ocess of manufacture of the objects Pagenstecher handed to
. Perhaps the best cases are those in which objects where
primary factor dominated were used as controls in tests
the vividness effect. The following series, numbered 53-55
d conducted on March 14 and 21, 1920, is an example.
e experimental objects were three pieces of paper from a
d belonging to a colleague of Pagenstecher's who had suf-
red a stroke. On the first piece of paper presented to Mrs.
rold the doctor had written a call for medical help with
left hand since he had lost the use of his right hand and
o could not speak. The second piece of paper presented
s written shortly before, at the onset of the stroke, with the
ht hand, while he could still use it. Finally, the third piece
s taken from the bottom of the pad and had presumably
t been touched by the doctor. Mrs. Zierold had the follow-
impressions when she held the first piece of paper:

> I am in an office, sitting on a desk, in front of a man whose face has a bluish tint, whose eyes are languid and whose mouth is slightly distorted. He tries to write something with his left hand which apparently contains an order, as an elderly lady who is at his side with two other . . . women, leaves the room hurriedly and comes back with another woman. In the meantime a young man of about thirty-five years of age, has unfastened the collar of the sick man and gives him some water to drink. At his side stands a young girl of about sixteen or eighteen years who pets him and kisses him very affectionately. After some time a man of vig-

> orous constitution enters the room and receives from the left hand of the sick man a small instrument which had been extracted by him from a pocket instrument case [a small lancet for bleeding]. Aided by the newcomer [the doctor called for] the young man already mentioned lifts up the invalid and carries him out of the room into an adjoining room, while I keep on seated upon the desk, being unable to move.[11]

These impressions were correct. The doctor had sudden been taken ill with a stroke, and the other events were also described by Mrs. Zierold. In response to the second sheet paper, she said, "I do not understand what I see. It seems me that there are *two conflicting visions,* superimposed one top of the other and blending together." Her first impressi was:

> I see in a large room, small boys with caps on their heads who push wheel carts filled with scraps of paper of different colors and also with old rags. I see women who separate the different colors with long forks. The scraps and pieces of rags are thrown into a large boiler.[11]

Mrs. Zierold continued and described her second i pression:

> I see a very sick man, with bluish face, who tries to speak without results as I see only the movement of his lips and do not hear a word. He takes a pencil with his right hand and writes something on a blank paper . . .[11]

Finally, the third piece of paper (taken from the bottom the pad) produced only images from the paper factory.

Vivid Events: As a rule, the responses which concern vivid or emotionally intense events were the most convinci from the point of view of supplying evidence for ES Several contained detailed descriptions, such as the o concerning the doctor, which it seemed impossible that M Zierold could have produced by normal means. Eleven of t fifty-three one-response sessions, or 21 percent, consisted accounts of such happenings. In addition, three of the ni o-response sessions (33 percent) also concerned vivid ents. Of this total of fourteen events, twelve had to do with th, sudden illness, or other crises. The identification string onging to the German sergeant mentioned above is an ex- ple. At the time of the experiment Pagenstecher knew the ntity of the owner of the string, but was not aware of the cific event apparently described by Mrs. Zierold:

> It is intensely cold and the day is foggy. . . . I am on a battlefield; it smells of gunpowder. In front of me I see a tall man standing, with a big grey overcoat on, which reaches to his feet. Behind him I see three other men standing likewise. They talk German, or better said, they shout. In front of them and lying on the snow, behind an earthwork, I see a line of soldiers keeping up a continuous rifle fire. Some five meters back of the firing line there are two groups of men plainly to be seen, one consisting of about five to six men, and another one of about twelve to fifteen men.
>
> Quite of a sudden I see coming through the air and moving with great rapidity a big red ball of fire . . . which drops just in the midst of the fifteen men, tearing them to pieces. Arms, legs, heads, pieces of uniform fly through the air. I hear the dreadful yell of the wounded and the pitiful moaning of the dying. This is a terrible sight.[11]

Sergeant Saenger stated that on a cold and foggy morning the Russian front, during World War I, he was with his erior officer (“a tall, solidly built man . . . wrapped in a ge grey mantle”) and two other non-commissioned officers, king four with himself, when an incendiary shell exploded a barn housing a section of rapid fire guns and killed enty-five soldiers who were there. “This fire bomb was the y one to hit the mark in those days, and on account of the rible sight I witnessed, *when seeing the building aflame,* hearing the distressing yells of dear friends buried under burning debris, I am certain that this was the first great pression I received of the war, possibly the greatest of all, it happened to be in the first month of my life as a sol- r.”[11]

This experiment was followed by another, No. 63, on May 1920, also with an identity string as the experimental object, but one which was not associated with such viol events. This string evoked only impressions apparently fr its manufacture; in other words, primary events. Howev there were exceptions to the vividness rule. At a third expe ment in this series, No. 64, on May 16, 1920, when Pag stecher used the identification plate which had been attac to the first string belonging to Sergeant Saenger, and wh was associated with the same events, Mrs. Zierold descri events connected with the manufacture of the plate, rat than the bomb explosion. Similarly, in an experiment wh Prince attended where the object was a knife that had b involved in an "emotional scene,"[12] Mrs. Zierold made o some vague statements about a knife factory. Pagenstec was of the opinion that metal objects are not as efficient "storing vibrations" as soft and porous ones. However, was a *bone* and metal knife, and bone ought to be as good ivory, which was used successfully in an experiment with ivory paper knife, also attended by Prince.[12]

The Swedish psychiatrist and parapsychologist, J Björkhem,[2] who also conducted object association tests w hypnotized subjects, similarly concluded that vivid, or e tionally intense events were more likely to be cognized t others.

Frequent Events: In the case of six of the objects in one-response sessions, or 11 percent, the events described Mrs. Zierold were of frequent or long duration in the hist of the object. In four of the nine two-response sessions percent), one of her impressions also concerned frequ events.

Pagenstecher's theory that his subject responded to "sto vibrations" in the experimental object gave him the idea the more vibrations of a particular sort were stored in an ject, the stronger would the resulting effect be. Whatever may be said about Pagenstecher's vibration theory, it has distinction of leading to a testable prediction which, parently, was fulfilled in the following experiment:

In preparation for this experiment, conducted on Janu 1, 1920, Pagenstecher placed a piece of broken pottery in case of a wall clock and left it there for fifteen days. clock struck the hours and half hours. He then gave the tery to Mrs. Zierold, who said: "I hear a *rhythmic noise*, far off, like drops of rain falling upon glass at equal interv besides, I hear, now and then, a *melodious noise* as if wind were sighing through the woods." A similar piece

tery which had not been in the clock did not elicit any im-
ssions of sounds. Pagenstecher then replaced the first piece
the clock and left it there for an additional seven days.
s seemed to result in increased clarity of the impressions:
hear the rhythmic steps of soldiers marching, and besides I
ceive now and then the *sound of a musical band* playing
away." Finally, the fragment was put in the clock an ad-
onal twenty-one days: "I hear distinctly the *tick-tock of a*
ck and the *harmonious striking of the clock bell*—one,
, two, three, four . . ."[11]

The apparent effect of frequency has been noted by other
estigators. Osty[9] said that an experiment is most likely to
ceed if the experimental object has often been touched by
person about whom information is desired and little
ched by anyone else. In an experiment with Richard
dgson,[23] Mrs. Piper made a similar observation and in an
eriment with W. R. Newbold,[23] she said that "it often
ses confusion" if the objects have been "handled often
d by a great many persons." Hodgson[4] concluded from his
eriments with Mrs. Piper that any object can be used, pro-
ed "it has been handled or worn almost exclusively by spe-
c persons." Similarly, H. F. Saltmarsh[22] noted that the
glish sensitive Mrs. Warren Elliott objected to "any article
ich has often been washed or handled by a great many
ple."

Recent Events: Pagenstecher does not refer to the recency
ect and there were no definite instances of it in the one-
ponse sessions. However, in six of the nine two-response
sions (66 percent), one of the responses referred to recent
nts. Four of these occurred in the experiments done on
uary 11, 1920, with Viramontes as co-experimenter.[11] In
paration for the tests, four similar pumice stones were each
jected to a different treatment for fifteen days. One was
ced in a solution of asafetida and gentian, another in the
e of a wall clock, a third in a refrigerated sugar solution,
d the fourth in burning sulfur. During the tests, the stones
re selected by Viramontes in random order and handed to
s. Zierold without Pagenstecher seeing which one she re-
ved at a particular time. Her statements were appropriate
all instances.

The stone which had been in the refrigerated sugar solu-
n was selected first. It gave rise to "a sweet taste in my
uth. Besides I feel a sensation of . . . intense cold, in the
of my fingers." Next came the stone from the clock,

which evoked "the tick-tock of a watch. There seems to b church in the vicinity as I hear the sound of bells." T came the stone which had been in burning sulfur: "I stror smell sulfur and I feel an intense heat at the tips of my gers." Finally, came the asafetida and gentian stone, wh produced a "most disagreeable odor unknown to me, an have an intensely bitter taste in my mouth." Supposedly, traces of odor had been removed from the stones treated v asafetida and sulfur; in any case, the stones that had been frigerated or placed in the clock case could not have retai any known physical traces of these events.

The impressions regarding the recent events these sto had been subjected to were in each instance preceded descriptions of water and fish, apparently referring to L Texoco, from which the pumice had been extracted. In m of Osty's[9] object association experiments with Mrs. Mo where the purpose was to obtain information about the ov of the object, the subject instead talked about Osty himsel the person who brought him the object—in other wo about its *recent* associations. In some of the experiments H. F. Saltmarsh[22] with Mrs. Warren Elliott, the experime objects were sent to the S.P.R. secretary, Miss Isabel New who wrapped them up and sealed them for the te Saltmarsh found that in about 20 percent of the experime the subject referred to Miss Newton and to the S.P.R. off rather than to the owners of the objects. As Saltmarsh no Miss Newton was the person who had most recently hand the objects.

Unclassifiable Responses: In fifteen of the fifty-three c response sessions, the impressions did not clearly belong any of the four categories. In five of these, the events v possibly primary; in three, vivid; in six, frequent; and in c recent. However, Mrs. Zierold's responses and the availa information about the objects were not detailed enough to dicate definitely to which of these or other categories her sponses belong.

Implications for the Survival Hypothesis

Many mediums [4,6,22,23,24] use objects in order to obtain formation about the deceased owners of these objects. In f it is extremely rare to have purported communications fr the dead without an object or some other physical link s the presence of a living relative or friend of the deceased. object association is a fact, what are the implications for vival? We would have evidence that, in a sense, past nts "survive." But this kind of survival of the past would dermine the evidence for personal survival since the events ociated with the object can be "recalled" by a subject with- postulating any assistance from the dead. If deceased per- alities are nevertheless involved in some of the mediumistic ect association cases, the objects with their associated emories" appear to function as substitute brains. However, simpler explanation of this type of mediumistic material hat the only personality involved is the subject's. The sur- al hypothesis could be justified only if there were some racteristics in the response which could not be accounted in terms of the subject's capacity to cognize the past ociations of the experimental object.

n the case of Mrs. Zierold, there was no indication that relied on anything but her own ESP powers, although she s convinced that the spirits of the dead sometimes helped . During the final session that Prince attended, on April 1921, when Mrs. Zierold was questioned during hypnosis ut her beliefs regarding intervention from spirits and other ics, she said, "On some occasions they assist me, when the tters] are transcendental. When not, they do not; I get vision from the object itself which you give me."[12]

Conclusion

Pagenstecher contributed to two important areas in apsychology. He was, as far as I know, the first investiga- to use hypnosis as a means to cultivate ESP in a gifted ject. Though other parapsychologists had conducted ESP s with hypnotized subjects, no one had systematically uti- d the trance state as a means to *develop* the subject's men- images. The fact that the method has been rediscovered Ryzl and used to good advantage adds to the prospect that ay have general application in ESP research.

Pagenstecher's studies were also, I believe, the first to indi- that the (parapsychological) association of objects may governed by the same laws that govern the (psychologi- association of ideas. He did not explicitly point to the ilarity between the association of ideas and the association objects, but it cannot have been far from his mind since he compared the "stored vibrations" in the world to a "cosr memory record" and emphasized that vivid and primary vib tions had a greater stimulating power than others. His expe ments, of course, do not establish the validity of the laws vividness, primacy, etc. for parapsychology. The investi tions should be regarded as exploratory and the "laws" of ject association as working hypotheses which need to tested under strict conditions. Several of Pagenstecher's te niques involving control objects, different kinds of prepa tory treatments of objects, etc., could be used in laboratories of today with only minor modifications.

There is a phrase that "ideas are things." If we are to juc from present developments in biochemistry and biophys this may turn out to be literally true. At the same time it n also be true that things are like ideas in that they obey so of the laws that govern the relationship between ideas. If t is the case, it could have significant implications not only parapsychology but for any science that deals with man a his world. I have mentioned its importance for the survi hypothesis. It will also affect ESP research. The clairvoyar tests of Ryzl and Pratt suggest that the phenomenon playec part in their experiments; it may be operating in other c tests as well.

If physical objects in some sense retain traces of p events associated with them so that these may later be vealed to an ESP subject, an understanding of this proc might also aid our knowledge of other reproductive proces in nature. such as those of memory and heredity.

Bringing together Pagenstecher's two contributions, we an associative matrix which is open to a person to the ext that he or she is able to relinquish the immediate sensory vironment. This loosening can be achieved by hypnosis a other methods which combine a relaxed open attitude w attention to mental images and impressions. Sense percept focusses on a restricted associative field: we see a chair cause we remember chairs from our past. Together with t memory we are likely also to experience some of its asso tions, such as tables or people we connect with "chair," a the emotions to which they give rise. Conscious awareness these associative connections is confined within a limi space defined by our self or physical organism. In fact, experience and define our self and body in terms of such sociations. The matrix itself, however, is not restricted in t way but encompasses other things and people. Neverthele rson's response to distant ("extrasensory") associations is terms of his "own" associations and memories. In ESP as sense perception a person essentially is aware of himself, at is of those associative clusters which exist within a acio-temporal confine he identifies with his personality or f. The experienced extent of this self is determined by its perienced borders. These in turn are a function of a per- n's state of consciousness, of the extent to which he allows e full associative field to emerge into awareness.

This psychic field encompasses the physical world (or the ysical world encompasses the psi field) and it is subject to ysical, psychological, and parapsychological laws. In other ords, it can be mapped systematically and the map tested ainst experience and experiment. The laws of primacy, re- ncy, frequency, and vividness, as extended to object associ- ion, are attempts to map this field by a combination of ychological and parapsychological concepts. It is still ahead us to bring these to empirical test. It is also ahead of us to plore further the means of opening the psi field to con- ious awareness and to determine whether field conscious- ess can extend beyond the living body. These two proaches define the purpose of psychical research as I see to formulate a testable theory for psi phenomena and to plore the potential for human experience beyond its famil- r reach.

REFERENCES

1. Beloff, J., and Mandleberg, I. "An Attempted Validation of the 'Ryzl Technique' for Training ESP Subjects." *Journal* S.P.R., Vol. 43, March, 1966, 229-249.
2. Björkhem, J. *Det Ockulta Problemet*. Uppsala: Lindblads Forlag, 1951.
3. Grela, J. J. "Effect on ESP Scoring of Hypnotically Induced Attitudes." *Journal of Parapsychology*, Vol. 9, September, 1945, 194-202.
4. Hodgson, R. "A Record of Observations of Certain Phenomena of Trance." *Proc.* S.P.R., Vol. 8, 1892, 1-167.
5. Johnson, R. *The Imprisoned Splendour*. London: Hodder and Stoughton, 1953.
6. Lodge, O. "Report on Some Trance Communications Received Chiefly Through Mrs. Piper." *Proc.* S.P.R., Vol. 23, 1909, 127-285.

7. Murphy, G. "Psychical Research and Personality." *Pro* S.P.R., Vol. 49, 1949, 1-15.
8. Myers, F. W. H. *Human Personality and its Survival* *Bodily Death*. London: Longmans, Green and Co., 1903.
9. Osty, E. *Supernormal Faculties in Man.* (Transl. by S. d Brath.) London: Methuen, 1923.
10. Pagenstecher, G. "A Notable Psychometric Test." *Journa* A.S.P.R., Vol. 14, August, 1920, 386-417.
11. ———. "Past Events Seership: A Study in Psychom try." *Proc.* A.S.P.R., Vol. 16, 1922, 1-136.
12. Prince, W. F. "Psychometric Experiments with Señor Maria Reyes de Z." *Proc.* S.P.R., Vol. 15, 1921, 189-314.
13. ———. "Psychometric Experiments with Señora Mari Reyes de Z." *Journal* A.S.P.R., Vol. 16, January, 192 5-40.
14. Rhine, J. B. "Extrasensory Perception and Hypnosis." I L. M. Lecron, *Experimental Hypnosis.* New York Macmillan, 1952, 359-375.
15. Rhine, L. E. "Frequency of Types of Experiences i Spontaneous Precognition." *Journal of Parapsycholog* Vol. 18, June, 1954, 93-123.
16. Roll, W. G. "ESP and Memory." *International Journa of Neuropsychiatry*, Vol. 2, October, 1966, 505-521.
17. Rosenthal, B. G. "Hypnotic Recall of Material Learne Under Anxiety and Non-Anxiety Producing Conditions. *Journal of Experimental Psychology*, Vol. 34, 194 369-389.
18. Ryzl, M. "Training the Psi Faculty by Hypnosis." *Jou nal* S.P.R., Vol. 41, March, 1962, 234-252.
19. ———. "A Review of Hypnotic ESP Experiments i Prague." *Journal of Parapsychology*, Vol. 28, Decembe 1964, 285-286. (Parapsychological Association Abstract.
20. Ryzl, M., and Pratt, J. G. "A Repeated-Calling ES Test with Sealed Cards." *Journal of Parapsychology*, Vo 27, September, 1963, 161-174.
21. ———. "The Focusing of ESP upon Particular Targets *Journal of Parapsychology*, Vol. 27, December, 196 227-241.
22. Saltmarsh, H. F. "Report on the Investigation of Son Sittings with Mrs. Warren Elliott." *Proc.* S.P.R., Vol. 3 1930-31, 47-184.
23. Sidgwick, Mrs. H. "A Contribution to the Study of th Psychology of Mrs. Piper's Trance Phenomena." *Pro* S.P.R., Vol. 28, 1915, 1-657.

Soal, S. G. "A Report on Some Communications Received through Mrs. Blanche Cooper." *Proc.* S.P.R., Vol. 35, 1926, 471-594.

Soal, S. G., and Bateman, F. *Modern Experiments in Telepathy*. New Haven: Yale University Press, 1954.

Tyrrell, G. N. M. "The 'Modus Operandi' of Paranormal Cognition." *Proc.* S.P.R., Vol. 48, 1946-49, 105-120.

Ullman, M., Krippner, S., and Feldstein, S. "Experimentally-Induced Telepathic Dreams: Two Studies Using EEG–REM Monitoring Technique." *International Journal of Neuropsychiatry*, Vol. 2, October, 1966, 420-437.

Warcollier, R. *Experimental Telepathy*. (Transl. by J. B. Gridley from *La Télépathie*, 1921.) Boston: Boston Society for Psychic Research, 1938.

White, R. A. "A Comparison of Old and New Methods of Response to Targets in ESP Experiments." *Journal* A.S.P.R., Vol. 58, January, 1964, 21-56.

White, R. W., Fox, G. F., and Harris, W. W. "Hypnotic Hypermnesia for Recently Learned Material." *Journal of Abnormal and Social Psychology*, Vol. 35, 1940, 88-103.

PERSONALITY DIFFERENCES IN THE EFFECTIVE USE OF ESP

Gertrude R. Schmeidler

Gardner Murphy taught psychology at Harvard Universi following in the footsteps of William James; one of students was Gertrude Raffel, now Dr. Gertrude R. Schme ler, Department of Psychology, The City College of N York, who in turn has introduced student after student to t rigors of experimental—but also imaginative—parapsycholo cal research. Schmeidler is best known for her division of e perimental subjects into "sheep" (those who are believers ESP) and "goats" (those who are nonbelievers), and for ge erally deepening the study of ESP in relation to person ity—the subject of this paper, which originally appeared the Journal of Communication *(Vol. 25, No. 1, Winter, 197 Dr. Schmeidler is co-author of* ESP and Personality Patter *(1958).* Copyright © 1974 by the Annenlberg School of Co munication.

A while ago, the important question to ask about ESP w "Does it happen?" Proponents said some of the evidence w convincing; opponents said the claims were based on we research or on selection of only the favorable cases.

By now, that first question has been resolved. The wei of affirmative evidence, collected under tightly controll conditions, is compelling. Research has moved along to m difficult questions, which run the whole range from the plied to the metaphysical but tend to cluster into two grou One type asks, "Why is ESP so inefficient as a means of co munication? What conditions will make it more effective? even less effective?" The other type asks questions li "What theory do we need for ESP: for communication wh ems uninfluenced by spatial or temporal distances, or by aterial barriers? Can it fit into post-Einsteinian physics? oes it imply a nonphysical mind or soul which can function dependently of the body and its sense receptors, and which erefore has the potential of surviving bodily death?"

Answers to these latter questions are elusive, but we have gun to learn a few partial answers for the questions in the st group. This paper will give a hasty overview of one area ere research works rather well in predicting both ESP fail- e and ESP success. The area deals with personality fac- rs—attitudes, moods, traits, motivations—which apparently rmit some people at some times to use their ESP ability ef- ctively; and it contrasts them with personality factors ich, when present, seem to produce either null ESP results meaningful, predictable errors.

In the old days, experimenters tried to study ESP only in ose gifted subjects who had already shown strong ESP ility. But gifted subjects are hard to find, especially if we e critical of their own unsupported claims. Perhaps because perimenters thought it unlikely that there were two kinds of ople—those with ESP and those without, or perhaps be- use they were too lazy to do the extensive pretesting of any claimants, they began to use as ESP subjects anybody o was handy. In Rhine's former Parapsychology Labora- y at Duke, subjects might be visitors who dropped in; in v own early experiments, it was Harvard staff and Harvard d Radcliffe students; for any of us who taught, it was the dents in our classes. To the astonishment of many, these selected subjects gave good results. ESP hypotheses tested th them were often confirmed; overall ESP results were ry often significantly high.

Was this because any large unselected group was likely to ntain a few gifted subjects? When we looked closely at the ta, it did not seem so. We did not find one large batch of ta centered around mean chance expectation and another tch that was markedly extra-chance. It looked rather as if me low level of ESP ability was a general characteristic of ese unselected subjects. (I have occasionally done informal ecks of this by asking someone who had given chance ores in classroom testing to come to my office for another ies. When I tried to make conditions congenial, ESP scores nerally were high; when I tried to impose uncongenial con- ions, scores usually fell to the chance level or below. It led e to infer that the chance results in the classroom came from either lack of involvement or else from alternating i terest and exasperation, which cancelled each other out.)

The general presumption nowadays is that ESP abili varies from person to person, of course—what ability do not?—but should be expected to be present in anyone. V expect the average level to be very weak, and the success-fa ure pattern to be variable, as if it were not under conscio control. By now, almost all research workers have "vote with their feet" on this set of assumptions. They have teste their hypotheses on anyone available, but, because they e pect low and variable scores, they have built a very lar number of trials into their research plans.

My own first experiments may give some of the flavor the research. An assistant followed the order of a table random numbers to prepare lists of the five ESP cards; s numbered the lists serially; she prepared the correspondi decks of cards; and she kept all this in a locked room. S did not know when I would test subjects nor whom I wou test; and I did not know the target order. Subjects, in a diffe ent room, wrote their ESP calls on serially numbered shee trying to guess the target order on the concealed sheet wi the same number, or the concealed decks that correspond to those sheets.

The first few subjects were interested and amused, a scored a little better than the average of one right out of fi tries which represents mean chance expectation. But th came two in rapid succession who had a different attitude and different scores. One thought the ESP concept inheren absurd: his phrase was, "If it was true, I wouldn't believe i The other took it all more personally; she resented any imp cation that her mother may have been right, instead of st pidly superstitious, in claiming to be psychic. Both of the scored markedly fewer hits than would be expected chance.

This looked interesting. Their excessive failures seemed li a Freudian slip, an unconscious avoidance of the correct sponse—which of course implies some unconscious inform tion about it. I therefore set up an experiment to test t hypothesis that subjects who completely, unequivocally reje ed any possibility of ESP success under the conditions of t experiment would have lower ESP scores than all other su jects.

It was a simple-minded hypothesis, making only a two-pa division, and pooling into one category people with marked

parate attitudes. Nevertheless, it was supported in series af-
series. Nine years later, I had tested over 1,300 subjects,
d the difference between the above-chance scores of those
o admitted some possibility of ESP success under the test
nditions and the below-chance scores of those who denied
vas significant at odds of less than a million to one.[19]

Over the years, others have also studied the question, and
lmer reports that their results were about what would be
edicted on the basis of mine.[8] Of the 17 studies with simi-
method, 13 showed a difference in the predicted direction
ometimes a much greater difference than in my data), and
of these differences were significant; of the remaining
ur, none was significant. The mean difference of the other
dies was similar to the small mean difference I had found.
other words, the batting average of the hypothesis was
rly high; it seems a valid but weak predictor of ESP scor-
.

What does it mean? I think we can pull three meanings out
it. One is that, under tight test conditions, ESP occurs. An-
her is that a negative attitude (in this case, expectation of
lure and presumably disapproval of the whole project) can
tort the *direction* of ESP scoring and result in extra-chance
oidance of the target. And a third is that this intellectual
estion of "Is ESP possible under these conditions?" has
me small relevance to the direction of ESP scoring, but not
ough to give a clean separation of high scores from low.

With the benefit of hindsight, it now seems possible to
ke a broader generalization under which we can subsume
earlier one. I would suggest now that the basic—or at
st one basic—predictor variable is the tendency to leave
eself open to impressions, a free, uncritical readiness to re-
ond. This might designate one end of a continuum of atti-
des, where the other end would be a closed, hostile
ection. Let me give some examples of the research on
ich this suggestion was based, and then some later studies
ich seem to give strong support to it.

Shields,[2] a school psychologist, routinely gave diagnostic
ts to children referred to her. In two experiments, with the
hool and the children consenting, she also administered
P tests. In the first experiment she found that the children
gnosed as withdrawn had made significantly lower ESP
ores than all others, and that her other diagnostic categories
re all associated with high scores. Her second experiment,
h different children, confirmed the first. The implication is

obvious: children who withdrew from other aspects of the experience also withdrew from the ESP targets and responde inappropriately to them.

Scherer[12] constructed a Marble Machine, where marbles five colors were thoroughly mixed in a container and cam out one at a time. The ESP task was to guess the color of th next marble. He set it up in a common room, told lab men bers and visitors about it, then invited them to try it onl when they had a strong hunch, and not more than once twice a day. Scores were spectacularly better than chance ex pectation. But when he set subjects to work at the sam machine and required them to make many calls in a sessio scores were significantly lower. He concluded that unforce freely spontaneous impressions were more likely to be corre for ESP than impressions obtained under forced, dutiful con pliance.

Eysenck,[3] reviewing half a dozen studies of extroversi and introversion's relation to ESP, along with many relate studies, found a clear trend for higher ESP scores among th extroverts, the group that would be expected to give liveli and freer responses. The earlier of these studies entered int my thinking in forming the general statement above; the la ter may be considered confirmatory.

At one time I began looking for hints about a brain locu for either ESP or ESP inhibition (a search that failed becaus no patient with localized brain injury was available for tes ing). In the course of this, I tested 18 patients with brai concussion. Their ESP scores were significantly high, thoug patients hospitalized for accidents without brain injury tende to make low scores. It was the first time I had seen anyo with concussion, and it astonished me that the patien seemed so placid and content, drowsing when left alone bu (after the nurse introduced us) pleasantly ready to take ES and Rorschach tests when I asked them to. I speculated th it was this relaxed and acceptant attitude, rather than th concussion, that resulted in the good ESP scores.[13]

A little later, a graduate student said she was interested i checking out this speculation. That was fine; but our proble was where in New York City to find a different group th was acceptant and relaxed. (Nowadays we might turn to med tation or relaxation groups; but this was long ago.) W racked our brains, then remembered that this was just ho both of us had felt after our babies were born, after we kne they were healthy but while we were still in the hospita thout households to care for or diapers to change. She acrdingly tested new mothers in the hospital, and found that ose who had no effects of anesthetics produced ESP scores en higher than the concussion patients, though those still fected by drugs made low scores.[5]

This second study was in a sense a confirmatory one; and e others that follow may be classed as confirmatory too, nce they were done fairly recently, long after the general pothesis was stated. Johnson and Kanthamani,[7] for exame, gave a defensiveness test to their ESP subjects and und—just as this general line of reasoning predicts—that e more defensive had the lower ESP scores; the nondefenve had more ESP success.

LeShan and I[18] accepted an expert's generous offer to score orschach responses for "barrier" and "penetration." We edicted, of course, that subjects with ESP scores near ance would be relatively high in barrier, while those with ove-chance scores would be relatively high in penetration; e Rorschach scores for barrier minus penetration showed a gnificant difference as predicted.

Many other studies also seem to support this general view, ut I will describe only one more. It issues from the research n sleep which tells us that almost everyone dreams during e night, though most dreams are forgotten by morning. We n infer that infrequent dream recall implies keeping one's arriers up, defending against or withdrawing from one's birre sleep experiences, while frequent dream recall suggests penness, even to illogical impressions. Honorton[6] acordingly asked his ESP subjects how often they recalled eir dreams, and found that subjects who answered "freuently" had significantly higher ESP scores than those who nswered "occasionally" or "rarely." It seems part of the me package.

The foregoing experiments all asked, "Which people are kely to make high ESP scores and which are likely to make w ones?" Another question, just as meaningful, is, "When ill any one person make higher ESP scores, and when will e make lower ones?"

One answer, well supported by research, is that when subcts have a generally favorable attitude toward the experient, they will score better with a method they prefer. There is some scantier evidence that with an unfavorable attude, the effect reverses—a sort of double negative.) Rao mmarized in 1965 over a dozen studies that showed this

differential or preferential effect,[10] and many others confirme
it since. If subjects are asked to write some responses but t
speak others, or if they are asked to guess at two kinds o
material, such as ESP cards versus abstract words like love o
hate, they tend to score better at the task they like bette
even though neither task as such is associated with highe
scores.

I will describe only one example here: one where prefe
ence was inferred from objective data instead of the usua
self-report. This was a PK experiment by Stanford [21] in whic
the subject released dice to tumble down a chute. Subject
were instructed to hope that when the dice came to rest the
would show a certain number. In half his trials, each subje
visualized the die face he wanted. In the other half he mad
abstract associations to the number he wanted. (All subjec
made an equal number of trials for each die face, in bot
conditions, so that imperfections in the dice would balanc
out.) Subjects then took a psychological test to show wheth
their habitual mode of thought was visual or was abstract an
associative. As you might by now expect, visualizers mad
higher PK scores when they visualized than when the
thought of abstract associations—but the abstract, associati
thinkers did just the opposite.

The tension associated with anxiety or arousal seems to a
fect ESP success in essentially the same way that it affec
success in other tasks. Too little makes for ineffective pe
formance; too much is debilitating; a moderate amount
best. There is an interesting interaction here between "stat
and "trait": subjects habitually composed seem to do be
when they are more aroused, but subjects habitually tense
anxious seem to do best with a bland situation. Just this effe
has been found by Carpenter[2] in an ESP test; his more an
ious subjects had higher ESP scores with a neutral than wi
an arousing target, but his less anxious subjects had high
ESP scores with the arousing target than with the neutr
one. And as might be expected, subjects given an ESP t
just before a job interview or an important oral examinati
made low ESP scores; once the interview or the test was s
isfactorily completed, ESP scores were higher.[11]

Data suggested early that identical twins or fiancés or ma
ried couples had better ESP scores than did strangers. Lat
research[14] extended the findings to differentiating pairs
strangers. Personality tests were used to predict which pai
when they met, would be congenial and which pairs would

stile or reserved. They met and were introduced; then the e designated as the agent was taken to another room and y did a GESP test together. Those predicted to be con- ial tended to score slightly better than chance; those dicted to be hostile or reserved scored markedly, signifi- ntly worse. Some later research found high scores between uples who loved each other, but other experiments did not. notional closeness or congeniality, then, seems to be an im- rtant but not an overriding factor in ESP success. Like ev- previous factor that has been mentioned, it seems to tie in h, and interact with, the rest of what is going on.

Even in clairvoyance or precognition experiments, where one can send messages about the targets, the human ings who are there seem to affect the scoring level. It has g been noted that some experimenters generally find null sults while others, equally careful, generally find extra- ance ones. A few follow-up experiments in which the two perimenters used identical procedures confirmed this ex- rimenter effect.[9,23] Pupils who like a teacher tend to ob- n higher clairvoyance scores in a classroom test than do pils who don't like the teacher; this seems clearly similar to experimenter effect described above.

The idea behind a recent experiment of mine was that dif- ent group situations create different moods, and that the st mood for ESP success is likely to vary depending on at experimenter a subject is working with, and what group or she is in. The method demands two sets of scores ob- ned under similar conditions: one to determine the predic- e hypothesis for a particular group, the second to test the pothesis.

The procedure we have used so far consists of an ESP test, errupted in the middle by a checklist on which subjects re- rt their moods. These self-reported moods are correlated th ESP scores in a "fishing expedition"; when a high corre- ion is found, we look to see whether the same moods cor- ate in the same direction again, with the same group, the ne experimenter, and the same general test conditions. sing a relatively small group, my co-workers and I found it cessary to give a retest to check on the hypothesis. With a ger group, Friedman[4] divided it in half, formed his hy- thesis from one set of subjects, and tested it on the remain- r.

We all found affirmative results, but with interestingly dif- ent mood patterns. With eagerly interested junior high school students who enjoyed their teacher, the best mood w a mix of social affection, a lively, joyful interest (surgency and concentration.[16] With a competitive group of youn business and professional men, the best mood was the con bination of egotism and low anxiety.[17] In an impersonal clas room, the best mood was the combination of low aggressio low anxiety, low depression—and low social affection.[4] Th seems to show what all of us know: circumstances alter cases.

Enough has by now been learned to show certain cond tions which determine whether ESP and PK scores will b high or low. These conditions seem on the whole to be sim lar to the ones that affect other kinds of performance: we ca expect low levels of success from subjects who feel co strained, defensive, uncomfortable, antagonistic; and highe scores from subjects who are comfortable with the situation demands and who feel interested, pleasantly stimulated b not overanxious, relaxed but not apathetic, receptive an ready to respond.

This is good, so far as it goes; but it does not go fa enough. It helps explain why ESP scores seem so inconsiste when disparate subjects are all grouped together, or when th same subject's moods and feelings vary. It tells us where t look, which conditions to control, in order to obtain mo consistently predictable data.

But there is much that we do not know: the limitations o success imposed by our having, in general, weak ESP or P ability; the full list of factors which distort or inhibit—o facilitate—this ability; the basic theory of how it operate Research has made a beginning toward stating laws of para normal communication, but we still have a long way to go.

REFERENCES

1. Anderson, Margaret, and Rhea White. "Teacher-Pup Attitudes and Clairvoyance Test Results." *Journal o Parapsychology*, Vol. 20, 1956, pp. 141-157.
2. Carpenter, James C. "The Differential Effect and Hidde Target Differences Consisting of Erotic and Neutr Stimuli." *Journal of the American Society for Psychic Research*, Vol. 65, 1971, pp. 204-214.
3. Eysenck, H. J. "Personality and Extra-Sensory Perce

tion." *Journal of the Society for Psychical Research,* Vol. 44, 1967, pp. 55-71.

Friedman, Ron. Unpublished thesis at Northeastern University, 1973.

Gerber, Rebecca, and Gertrude R. Schmeidler. "An Investigation of Relaxation and of Acceptance of the Experimental Situation as Related to ESP Scores in Maternity Patients." *Journal of Parapsychology,* Vol. 21, 1957, pp. 47-57.

Honorton, Charles. "Reported Frequency of Dream Recall and ESP." *Journal of the American Society for Psychical Research,* Vol. 66, 1972, pp. 408-414.

Johnson, Martin, and B. K. Kanthamani. "The Defense Mechanism Test as a Predictor of ESP Scoring Direction." *Journal of Parapsychology,* Vol. 31, 1967, pp. 99-110.

Palmer, John. "Scoring in ESP Tests as a Function of Belief in ESP, Part I: The Sheep-Goat Effect." *Journal of the American Society for Psychical Research,* Vol. 65, 1971, pp. 373-408.

Pratt, J. G., and Margaret M. Price. "The Experimenter-Subject Relationship in Tests for ESP." *Journal of Parapsychology,* Vol. 13 (2) 1938, pp. 84-94.

Rao, K. Ramakrishna. "The Bidirectionality of Psi." *Journal of Parapsychology,* Vol. 29, 1965, pp. 230-250.

Sailaja, P., and K. R. Rao. "Experimental Studies of the Differential Effect in Life Setting." *Parapsychological Monographs,* No. 13, 1973.

Scherer, Wallace B. "Spontaneity as a Factor in ESP." *Journal of Parapsychology,* Vol. 12, 1948, pp. 126-147.

Schmeidler, Gertrude R. "Rorschachs and ESP Scores of Patients Suffering from Cerebral Concussion." *Journal of Parapsychology,* Vol. 16, 1952, pp. 80-89.

Schmeidler, Gertrude R. "Evidence for Two Kinds of Telepathy." *International Journal of Parapsychology,* Vol. 3, 1961, pp. 5-48.

Schmeidler, Gertrude R. "Parapsychologists' Opinions about Parapsychology, 1971." *Journal of Parapsychology,* Vol. 35, 1971, pp. 208-218.

Schmeidler, Gertrude R. "Mood and Attitude on a Pretest as Predictors of Retest ESP Performance." *Journal of the American Society for Psychical Research,* Vol. 65, 1971, pp. 324-335.

Schmeidler, Gertrude R., and James G. Craig. "Moods and ESP Scores in Group Testing." *Journal of the American Society for Psychical Research*, Vol. 66, 1972, pp 280-287.

18. Schmeidler, Gertrude R., and Lawrence LeShan. "An Aspect of Body Image Related to ESP Scores." *Journal o the American Society for Psychical Research*, Vol. 6 1970, pp. 211-218.
19. Schmeidler, Gertrude Raffel, and R. A. McConnell. *ES and Personality Patterns.* New Haven: Yale Universit Press, 1958.
20. Shields, Eloise. "Comparison of Children's Guessin Ability (ESP) with Personality Characteristics." *Journa of Parapsychology*, Vol. 26, 1962, pp. 200-210.
21. Stanford, Rex G. " 'Associative Activation of the Unconscious' and 'Visualization' as Methods for Influencing th PK Target." *Journal of the American Society for Psychical Research*, Vol. 63, 1969, pp. 338-351.
22. Stuart, C. E. "GESP Experiments with the Free R sponse Method." *Journal of Parapsychology*, Vol. 1 1946, pp. 21-35.
23. West, D. J., and G. W. Fisk. "A Dual ESP Experime with Clock Cards." *Journal of the Society for Psychic Research*, Vol. 37, 1953, pp. 185-197.

POLTERGEIST PHENOMENA AND PSYCHOKINESIS

A. R. G. Owen

---

r. Owen, after a challenging academic career at Cam-
ge University, settled in Canada, where he teaches mathe-
ics at the University of Toronto and is Executive Director
he New Horizons Research Foundation; he is also active
he Toronto Society for Psychical Research. Dr. Owen
major attention with his work, Can We Explain the Pol-
eist? *(1966), receiving an award from the Parapsychol-*
Foundation as well as the William McDougall Memorial
ard of the Parapsychology Laboratory, Duke University,
ecognition of outstanding and original research. Dr. Owen
he author of Psychic Mysteries of Canada, *published as*
chic Mysteries of the North *in the United States (1976),*
first major work on psychic traditions and research within
ada.

---

ignificant parapsychological events of recent years have,
ny opinion, been particularly notable in the field of *psy-*
kinesis, or PK. The word *psychokinesis* is made up from
Greek words—*psyche,* which means "mind or soul," and
sis, which means "movement." Scientists use the word
hokinesis to allude to the fact of a physical object being
into motion without any known physical means being ap-
d and as a result of someone's mental intention. *Kinesis*
rs to the movement of the object and *psycho* to the fact
the happening results from someone mentally intending
illing it to happen.

ne type of psychokinesis was demonstrated many years
by Dr. Joseph B. Rhine in his laboratory at Duke Uni-
ty, when he showed that people could exert an effect on
all of dice by willing them to come down with a particu-

lar side uppermost. More recently, movies have been show in North America in which a Russian woman, Madam Mikhailova [Nina Kulagina], can, by mental concentratio only, cause small objects such as cigarette lighters, matcl boxes, and pencils to slide around on the surface of a tabl

Not long ago we ourselves, in the Toronto Society for Psy chical Research, made many observations of psychokines done by a young Canadian named Jan Merta. He was able t control the motion of a mobile hung up on a thread inside a airtight jar. He could make the mobile start rotating from state of rest, swing through a specified angle, stop on d mand, and reverse or continue its motion as directed. Whi carrying out this psychokinesis, Mr. Merta put himself delil erately into a relaxed state of mind in which he would "i tend" the stopping or starting of the feather without strong willing it to happen. Thus, Jan Merta had developed a speci psychological skill for the practice of psychokinesis (Owe 1972 b).

Recently psychokinesis has come into prominence in co nection with the metal-bending phenomenon demonstrated l Uri Geller and Matthew Manning. Despite some minor co troversy about Uri Geller (which seems to have been inspir entirely by the professional jealousy of stage magicians the result of metal bending "breaking out all over" and bei witnessed by so many excellent witnesses and being film and videotaped *ad libitum*, has been to establish, once a for all, the abundant reality of psychokinesis as a scienti fact.

This is tremendously exciting, as it shows that the hum mind is an even more wonderful thing than was previous suspected. It proves also that there are other physical forc in the universe besides the ones known to science—electrici magnetism, and the two kinds of nuclear force that ho atoms together. Strangest of all is the fact that mental inte tion can, by itself, bring these forces into play. But, exciti as this knowledge is, it leaves many questions unanswered.

The first question is whether all the practitioners of p chokinesis that I have mentioned—Jan Merta, Madar Mikhailova, Matthew Manning, Uri Geller, and the met benders—only have this ability because they are very spec people whom no ordinary person can hope to imitate even a small way. In other words, can one hope to perform i only if one is of a special breed, someone endowed with particular kind of innate genius? This is a serious questi cause the people I have mentioned, especially Madame khailova and Matthew Manning, had an early history of ng centers of what are called poltergeist phenomena or curring spontaneous psychokinesis." These are situations in ich strange events take place, apparently without rhyme or son, in the presence of the person concerned. Thus, in dame Mikhailova's presence, domestic objects would ually move around; plates would leap from the kitchen lves. These episodes would occur erratically, according to fixed schedule. In medieval Europe occurrences of this sort uld be blamed on "poltergeists" or "noisy spirits," thought as akin to elves or goblins—the little nature spirits of folk-e. This is why the term "poltergeist" is still used, although st of the scientists who study this kind of happening do think of it as caused by poltergeists or spirits but as a m of psychokinesis.

Usually when people such as Madame Mikhailova are the nter of "poltergeist" phenomena, it seems that the events caused by some force that originates in them, albeit in ne mysterious fashion that we do not yet understand. How-er, at the outset at least, it seems that the person concerned es not have the force under his conscious or voluntary con-l. That is, the psychokinesis is *involuntary*.

The involuntary or unconscious character of the PK oper-ons has been one of the many factors that in earlier times scured the true nature of poltergeist outbreaks which have en described for centuries in very similar terms. Since the ne of the Roman Empire writers have told anecdotes of ltergeist hauntings. This kind of haunting rarely includes nventional elements such as ghosts and apparitions. Instead, afflicted household is disturbed by a variety of noises—pings, pitter-patterings and scratchings. In addition, do-stic objects such as tables, chairs, pots and pans move out or even fly through the air, apparently of their own vo-on. In the nineteenth century, Professor Sir William Bar-t, Fellow of the Royal Society, professional physicist and ateur psychic investigator, pointed out that many such es had certain features in common, setting them apart m other kinds of haunting. Unlike what happens in some utedly haunted houses, poltergeist disturbances do not go for years and years. Instead they last for only a few days weeks. Also they are not attached primarily to a particular lding. But they seem to center on a particular individual.

There is usually some member of the household who is kind of focus for the disturbances. They occur only if thi person is around. Nothing happens in the house if he or sh goes out. However, they often start up again at the person next port of call. Generally the "focus" is a child or a teen age boy or girl. Slightly more frequently it is a girl. It ha therefore been suggested that the phenomena have somethin to do with the mental or physical conditions of puberty.

At this stage an important problem presents itself. Tw radically different explanations are available. The first explanation assumes that the poltergeist focus is really "medium." As a spiritualist medium at a séance is suppose to do, she is a bridge or instrument by which a discarnate entity comes into operation. If the medium's role is merely t enable the entity to be present in her vicinity, then it must a directly on the objects which move. Alternatively we coul suppose that, becoming attached to the medium, it endov her with unusual powers that operate on objects at a distance.

The other explanation does not think of the poltergeist gi as a "medium" for some other being. It assumes that she he self becomes temporarily capable of telekinesis, usually without consciously knowing it. I myself incline to favor th view. On this interpretation there is no room for a "polte geist" as a free entity or spirit. I think that in the majority poltergeist cases the evidence positively requires us to assun that the poltergeist focus is herself, at least temporarily, cap ble of psychokinesis usually without conscious intent awareness of the fact. On this view there is no "poltergeis or "spirit" involved other than that of the living poltergei girl.

It would, of course, be improper to prefer the naturalist explanation if, in the type of poltergeist case under discu sion, there were definite indications of attempted communic tion from another world or from beyond the grave. Howeve in only a small proportion of cases it is alleged that the nois appear to take the form of coded raps. And even in the cases such communications as are inferred do not seem to readily identifiable with such as we might expect from spir of the dead or even with coherent personalities.

Apparitions are rare in poltergeist cases. There are sor moderately well-evidenced cases, though only a few, in whi the poltergeist (it is said) has carried on long conversatio in human speech. Since speech is merely a form of sou these allegations are not necessarily preposterous, ev ough we cannot as yet place much reliance on them being e. However, such talking poltergeists as have been reported ng no important messages from other worlds. They are ually cheeky, flippant, fanciful and scatter-brained, and ap- ar to have no stock of notions in any way different from ose of the historical period in which they are manifested. is, for what it is worth, supports the concept of the polter- ist as a functioning of an unconscious part of a living hu- an mind rather than as a messenger from the dead.

I do not insist that deceased persons never communicate; a estion which remains open. However, I think that the turalistic explanation is to be preferred for poltergeist cases the type under consideration, where the happenings center a poltergeist focus. On this theory the poltergeist individ- l himself activates physical forces of obscure origin. Be- use of their selective mode of application these forces are t simply equivalent to electricity, magnetism or gravitation, t are of a new kind. Also the forces show no especial affin- with those supposed to be productive of physical phenom- a at mediumistic séances. Ectoplasm is conspicuously sent in poltergeist cases. Poltergeist phenomena rarely re- ire darkness and are almost invariably observed in full ht. In the few poltergeist cases where anything resembling rance is reported, the phenomena, oddly enough, do not m to happen during the trance but at other times.

On the naturalistic theory, should poltergeist studies be re- ded as falling in the field of psychical research—as op- sed to physics and physiology? Is there anything psychic out them? The answer is, yes. Poltergeist phenomena never ter on animals: poltergeist cats and dogs are unknown. In dition, no poltergeistery occurs when the poltergeist indi- ual is in normal sleep. Thus the higher brain centers are in ne way involved, and the problem is psycho-biological as ll as physico-physiological. This suggests that it is fitable to look for psychological factors in causation.

Sometimes emphasis has been placed on purely biological tors. Thus the juvenility of poltergeist individuals encour- d Hereward Carrington (a distinguished parapsychol- st), writing in 1930, to associate poltergeistery with puber- "An energy seems to be radiated from the body . . . when sexual energies are blossoming into maturity . . . It would ost seem as if these energies instead of taking the normal rse . . . find this curious means of externalization." Now erceive in this remark the germ of a correct theory but it

will not do as it stands. Admittedly it is a curious fact th
many poltergeist foci do enjoy good physical health and the
intelligence is at least average. However, the amount of e
ergy used in poltergeist manifestations is quite trivial in rel
tion to the normal physical activities of youth. Al
Carrington's theory can hardly apply to cases of adult polte
geist individuals. Despite the fact that many poltergeist fo
are in the age range ten to 20, it is by no means clear th
the poltergeist disturbances coincide at all precisely wi
pubertal changes. However, there may be something to
said for a modified form of Carrington's theory in which
think not of physiological energy but of emotional tensi
which can occur both before and after puberty.

It is an interesting fact that though poltergeist individua
are in the main healthy, a few of them have suffered fro
curious fits or turns. A careful examination of the case hist
ries shows that these fits are not epileptic but something qui
different—hysterical attacks. One of the most interesting e
amples was that of "Karin N." who lived in a house in t
middle of a forest in southern Sweden, for the good reas
that in 1897 she had married Mr. N., an inspector of fores
In 1905 Karin, then aged 27, was investigated by Dr. Hja
mar Wijk of Gothenburg and Dr. Paul Bjerre. Karin was b
sically healthy and of strong physical constitution. T
marriage was childless and from 1898 Karin exhibited va
ous neurotic symptoms. These took the form of fainting fi
which sometimes occurred several times a day. A fit would
preceded by a violent and unconquerable feeling of anxie
which ceased when the fit commenced. In the fit Karin's arr
would tremble and sometimes her whole body also. S
would then lie in a paroxysm of tears and laughter with pa
tially veiled consciousness and incapable of voluntary spee
or motion. From May, 1904, the villa which Karin and h
husband had occupied in April was agitated by mysterio
knockings, occurring (as is typical of many poltergeist case
in the evenings when Karin was in bed but not aslee
Karin's illness was correctly diagnosed as hysteria, a con
tion in which the patient is truly ill but totally ignorant of t
real cause of his illness, which is psychological and lock
away in the unconscious part of his mind.

Karin is not the sole instance of a poltergeist person with
hysterical illness. Hysterical fits, faints and comas were cha
acteristic of Floralina, a poltergeist girl in India in 1897,
Mary Langdon at Youghal near Cork in 1661, and of Go

aine Maire at Nancy, France, in 1910, who suffered from
nsitory losses of full consciousness which could well have
en hysterical "absences." Esther Cox, the heroine of the
sational poltergeist haunting at Amherst, Nova Scotia, in
78, was said to swell visibly, signifying hysterical mete-
ism or aerophagy, in which air is sucked involuntarily into
stomach. About 1898 Mary Carrick, an Irish servant-girl
Boston, was pursued by raps on the walls of any room
ere she was working and quite heavy objects would move
her presence. Knockings occurred by her bedside during
r sleep in apparent exception to the rule that a waking state
necessary for poltergeistery. But she would cry out and stir
itatedly in her sleep which was not normal on these occa-
ns. In fact Mary was a somnambulist. She would get up in
night and do housework while sleep-walking. About 1840
ary Jobson of Sunderland had pains in the head, abdominal
elling, convulsive fits and insensitivity in regions of the
n. Then she became blind, deaf and dumb. Poltergeistery
sued: throwings of water and violent knockings. The
ess was not mortal. She had a sudden recovery which am-
confirms a retrospective diagnosis of hysteria. Angélique
ttin, investigated by the French Academy of Science in
46, had some symptoms also reconcilable with hysteria.
r left arm was at a raised temperature; it trembled and
s easily put into a muscular spasm.

It would be wrong to suggest that all poltergeist people are
have been hysterical. Indeed the majority show no sign of
s or any other psychological ailment. But the proportion of
rkedly hysterical persons is certainly high among polter-
ist people as compared with a random sample of the gen-
l population. This suggests rather forcibly that poltergeist
ppenings, like hysteria, are psychologically triggered off. We
st suppose also that the psychological mechanism which
ecipitates a poltergeist outbreak involves some of the same
tors as are encountered in the production of a hysterical
ess.

Hysteria and dissociative reactions constitute only one
oup of a class of ailments known as neuroses. Neuroses
ve no organic cause; they are psychological illnesses. A
urotic has no derangement of his mind or reason. It is basi-
ly a disturbance of the emotions in a person who is essen-
lly normal and of good character, *not* a psychopath. One
d of neurosis is the anxiety attack, spells of "free-floating"
ad such as Karin had before her fits. Betsy Bell of

Tennessee, the center of elaborate poltergeistery in 181
seems not to have been hysterical but to have suffered fro
the "hyperventilation syndrome," in which an anxiety attac
engenders "over-breathing" so that the victim faints, fro
temporary oxygen-poisoning. It was *after* these fainting fi
that the Bell poltergeistery would commence each evening.
is tempting to suppose that in some way the poltergeist ph
nomena relieved Betsy's anxiety. In Karin's case her anxie
was relieved by her hysterical fits. As we say: the anxiety w
"converted" into the hysterical symptoms. We can therefo
hazard the guess that for Karin there were two forms of r
lief of anxiety, conversion into hysterical symptoms on th
one hand and poltergeistery on the other. In each case th
process would be an unconscious one.

Is poltergeistery therefore a conversion neurosis? Is anxie
converted into noises and flinging of objects? This tempting
simple theory is not quite adequate. Unless relieved sudden
by one of the "miracle" cures so typical of that field, hyste
cal conversion symptoms tend to be durable. Looked at fro
this point of view the mystery of poltergeistery is not
much why it starts as why it usually stops. It is a typical a
very puzzling feature of poltergeist outbreaks that they do n
continue indefinitely. Any tenable theory of poltergeist caus
tion must accommodate this fact. Poltergeistery is not usua
a chronic condition. Instead we could liken it to a mild infe
tion such as chickenpox, from which the victims invariab
recover in a week or two. It runs its course like a fever. A
fever is not so much the disease itself as the body's effort
cure. Pursuing this analogy, we might guess that poltergei
ery starts but eventually terminates because it is not a disea
but the cure.

In 1895 Sigmund Freud and Josef Breuer published
series of papers entitled *Studies on Hysteria* in which th
sought for a scientific theory of how hysteria comes abo
Much of what they said is directly applicable to the polt
geist problem. In all human beings there is a natural tenden
to keep emotional tension (or "excitation" as Freud called
down to a moderate level. A surplus of excitement is distu
ing and the individual therefore has a variety of means
dissipating it. Sometimes this can be achieved in a direct w
Love or anger can be subdued by erotic activity or by taki
revenge. Life is not always so simple, but fortunately there
another mechanism which is usually effective. This is

aring away” or erosion of the excitation, which takes e by a process of intellectual activity, “cooling off” by king around the situation or “talking it over,” even if y with oneself.

n addition, Freud and Breuer drew attention to a third nal mechanism, “working off,” for disposing of the charge motional tension. This mode of reducing tension employs sical activity and tends to occur in an automatic and in- ctive fashion. When fearful or enraged or in mental or sical pain, we are apt to tense our muscles, pace the floor, r lamentations or curses, or indulge in sobs and tears. se activities are often quite pointless as regards improving objective situation, but popular wisdom acknowledges r role in reducing tension by such proverbial phrases as wing off steam” or “crying oneself out.” These colloquial- s point the contrast between the method of “working off” that of dissipating tension by “wearing away,” which is ularly described as “talking it over” or “thinking it out.”

he physical activity of “working off” is itself a substitute direct fulfilment. According to Freud and Breuer, when narck, the German chancellor, had to suppress angry ings in the king’s presence he would subsequently resolve tension created by smashing an expensive vase upon the r. A similar delayed or surrogate reaction is sometimes erved in small but generally well-behaved children who asionally astonish their elders by sudden and isolated acts vandalism accompanied by no outward sign of temper or ation.

here is a parallel between poltergeist people and religious matics, a notable proportion of whom show overt hysteria. with stigmatization as with poltergeistery a large propor- of subjects (indeed the majority of them) *cannot* be cribed as hysterical. Religious stigmatics, moreover, are dominantly female though male cases are known. Hence a legitimate inference from the statistics) hysteria *per se* not be the cause. However, it is easy to recognize those ors of personality which are common to the generation of teria and the adoption of stigmata. These are a kind of -suggestion, and a capacity for unconscious control of ly processes manifested in skin lesions and blood flow in stigmatic and in conversion symptoms in the hysteric ven, 1972a).

o identify the personality factors common to the hysteric the poltergeist subject, it is useful to recapitulate Breuer and Freud's theory of hysteria. Human beings normally r lease nervous tension (or "excitation" as they called it) b (i) actual biological response (such as making love or b physically assaulting their enemies), or by (ii) a conscio psychological process of attrition (e.g. "simmering down" or by (iii) surrogate physical activities (such as tensing th muscles, biting the carpet like Hitler, or smashing Dresde vases like Prince Bismarck). If routes (i) and (iii) a blocked by circumstances and route (ii) is blocked by ps chological repression forcing the excitation out of consciou ness, then neurotic symptoms may result: phobic, obsessiona dissociative or conversional.

On this line of reasoning the factors common to the etiol gies of hysteria and poltergeistery would be the initial char of excitation and the tendency to repression. It would be i correct, however, to regard the P.K. phenomena as essential conversion symptoms. It is, however, plausible to regard the (at least in their early stages) as a fourth route, open to few specially endowed people, of working off the repress excitation; or, more precisely, it is route (iii) in the form surrogate "paraphysical" activity. This explanation has t advantage of explaining one feature common to the vast m jority of poltergeist cases, the fact that they are of limited d ration—days, weeks or at most a few months. Sometimes th is explicable in terms of an alteration of the family situati in a direction which tends to reduce the causes of tensio However, one does get the impression that usually poltergei ery is self-extinguishing, as on the present theory it ought be, for the simple reason that the phenomena (like the sym toms of fever) represent not the disease but its cure.

The above reasoning is a slight elaboration of what I sa in 1971 (a) and 1972 (a).

My own interest in the subject of P.K. was origina aroused by several cases that seemed to be involuntary; i. the events do not seem to be the result of conscious volition the people concerned. At the time even the parapsychologi profession was lukewarm to poltergeist phenomena ("spontaneous recurrent P.K.") as these happenings are calle Partly as a result of my own efforts and those of investigato such as William Roll, Dr. Pratt and Dr. Bender, poltergei ery is now accepted as a valid paranormal phenomeno What is interesting is that in their early phases these P.K. fects are quite involuntary at the conscious level. Howev they may be under the control of the unconscious mind. F

mple, in the Karin case in Sweden in 1905 the phenomena
e modified by hypnotizing the lady on whom they were
ussed (Owen, 1964).

t that time, poltergeist effects were important be-
se they were on a much larger scale than those which Dr.
ne (1944) had found in dice-throwing experiments. But
were tantalizing because they were of short duration. Pol-
geist people usually lost their powers. Any exception,
efore, was intensely interesting. Shortly afterwards, my
e and I came on a poltergeist person "George S." who
t through what seemed to be a progressive series of types
phenomena, poltergeistery, trances, and mental abilities—
rvoyance and precognition, but we were not able to delve
y deep into George's case. Also George's phenomena
med to be involuntary (Branston, 1974).

t was not until 1970 when we had moved to Canada that
obtained firsthand experience of voluntary P.K. through
experiments with Jan Merta. Jan could voluntarily initi-
and control the motion of a mobile suspended in a sealed
Two things were interesting. He was something of a pol-
geist person, though only to a minor degree. What is more
ortant: he deliberately induced this power by training
self in what we now call "a psychological skill." Jan
rta learned that in order to produce his P.K. effect he had
put himself into a special frame of mind. He had to be
xed, yet he had to "intend" the motion of his P.K. object,
he could not allow himself vehemently to "will" the out-
ne. Later, these facts gained heightened significance for us.

bout the same time as we were doing this work we re-
ved news from England. Three years previously, we had
died Matthew Manning, an "ordinary" poltergeist boy,
n eleven years old. His phenomena had stopped after three
nths and we had doubted if they would ever recur. But in
spring of 1971 they returned on a vast scale, both at his
nbridge home and at his English boarding school. In a
y, they can be said never to have died out since that time.
tthew says that even now the "energy" builds up every
days and expresses itself in poltergeist phenomena. How-
r, in 1971 he found a way of regulating it. If he did auto-
ic writing or drawing, the build-up of "energy" was
pended. This is interesting as it shows a kind of "symptom
stitution," as we put it in our writings. Matthew's ca-
ity for symptom substitution turned out to be very useful
s. In March, 1974, we were fired by a successful outcome

to the “Philip” research and an experiment with Uri Geller t seek to convene Matthew Manning, Uri Geller, the “Philip group, and friendly professors to a brainstorming conferenc We wrote to Matthew, who told us that, having seen Uri o British television, he had taught himself to do metal-bending We were pleased, not least because the existence of a plura ity of practitioners of this art tends to cut the ground fro beneath the feet of our various critics. In any event Matthew at our conference, bent or divided scores of metal object many of which were borne proudly away by their owners- often distinguished professors. For good measure, he cou also (like Mme. Mikhailova) deflect a compass needle, an he produced some very strange Kirlian photographs for ou friend Douglas Dean (Owen, 1974; Manning, 1974).

So far so good; our Anglo-Canadian experience in a de ade and a half had shown that, in respect of P.K., some a born great (Uri Geller), some achieve greatness from humbl beginnings (Jan Merta), but what of ordinary people? there a way by which people either singly or in groups ca attain to psychokinesis? The English experience was encou aging; the children, discovered independently by sever researchers, who took up metal-bending may be representati of the “common man.” On the other hand, any genetical minded investigator might wonder if these are merely i cluded in a hundredth of one percent of the human race wh happen to be endowed with a “P.K. genotype.” Perhaps w have found part of the answer in our “Philip” group research.

We have recounted elsewhere how that research cam about (Owen with Sparrow, 1976). (This in itself has impl cations for the origin of scientific discoveries, but we do n have time for that now.) Suffice it to say that a group eight people who met regularly and addressed themselves to totally imaginary and fictitious entity “Philip” there equipped themselves with the requisite psychological skill. consequence, they produced genuine physical phenomena, e sentially sounds—rappings out of the woodwork—curious reminiscent of poltergeist knockings such as the first publishe document of that ilk—the Sauchie rappings (Owen, 196 1964). What does this mean? We think the simplest interpr tation is the best. Most people have a little P.K. in them ev if, as compared to the great geniuses like Uri Geller, Ma thew Manning, D. D. Hume, or Stella Cranshaw, they a mere “psychic morons.” As in the old days, six men cou carry the litter of a king—portage by committee—so, in o y, when the Iron Age of the archaeologists shows signs of awing to its close, we have P.C.—"Psychokinesis by ommittee."

This finding confronts us with numerous issues as yet unre-ved. How are the separate individual quotas of P.K. force nchronized in time so as to permit their effective summa-n? Only telepathy would seem adequate to that task. Is te-pathy a form of P.K. operating on the brain of the rcipient? We do not yet know if the work of our Dr. Lloyd ikely to solve this problem (Lloyd, 1973).

Be that as it may, very interestingly, we have quite recently und that the type of P.K. phenomenon produced by the hilip" group is malleable (Iris Owen, 1975). That is to say, conscious direction of effort they can substitute other phe-mena in place of rapping or table movements. In this way, ey added metal-bending to their repertoire. At one point, group during their sessions kept metal objects on the ble with the intention of bending them. They succeeded in nding a thin medallion and a key. Later on, they were sited by a journalist, Mr. Bill Dampier. He sat in the circle king his own questions and getting answering raps under hand. He asked the group to bend his housekey which s laid on the table and was quite flat. A professional pho-grapher was present taking pictures continually and the om was in bright light. After a while, the key could be seen viously to be bent. It was photographed and taken home by . Dampier, who was told that it might continue to bend. e next day, he telephoned to say it had bent still more and had sent again for a photographer!

Now it is not really true what is sometimes said: that anormal phenomena need more proof than other ones. ery phenomenon needs the same degree of proof—neither r nor less. What is true, however, is that our critics will be silenced until the phenomena are too abundant to be ied. However, that point has almost been reached; the ctitioners will soon outnumber the critics. The history of tal-bending agrees with that of the "Philip" phenomenon showing that faith is an efficient generator of paranormal lities in those genetically endowed with latent talents. We not tell what the end of it will be but it is clear that cur-t trends represent a total transformation of the status of . powers, making them available for scientific investiga-n and eventual understanding. We are at the end of an era at the opening of another.

REFERENCES

1. Branston, Brian. *Beyond Belief*. London: Weidenfeld an Nicholson, 1974.
2. Breuer, J. and Freud, S. (ed.) *Studies on Hysteria.* London: Hogarth Press, 1956.
3. Lloyd, D. H. "Objective Events in the Brain Correlatin with Psychic Phenomena." *New Horizons,* Vol. 1, No. 1973, 69-75.
4. Manning, Matthew. *The Link*. Bucks., U. K.: Coli Smythe, Gerrards Cross, 1974 (also New York: Hol Rinehart and Winston, 1975).
5. Owen, A.R.G. "The Sauchie Poltergeist of 1960." *To morrow,* Vol. 10, No. 2, 1962, 37-47.
6. Owen, A.R.G. *Can We Explain the Poltergeist?* Ne York: Taplinger Publishing Co. 1964.
7. Owen, A.R.G. "Poltergeists." *Man, Myth and Magi* Vol. 79, 1971(a), 2223-2228.
8. Owen, A.R.G. "Stigmata and the Physical Phenomena Mysticism." *Man, Myth and Magic,* Vol. 96, 1972(a 2697-2703.
9. Owen, A.R.G. "Demonstration of Voluntary Psych kinesis: Report of a Seminar." *New Horizons,* Vol. No. 1, 1972(b), 25-27.
10. Owen, Iris M. " 'Philip's' Story Continued." *New Hor zons,* Vol. 2, No. 1, 1975, 14-20.
11. Owen, Iris M. with Sparrow, Margaret H. *Conjuring Philip*. Toronto: Fitzhenry and Whiteside, 1976 (Ne York: Harper and Row).
12. Rhine, J. B. and B. M. Humphrey. "The P.K. Effec *Journal of Parapsychology,* Vol. 8, 1944, 18-60.
13. Roll, William G. *The Poltergeist*. New York: Nels Doubleday, 1972.

ESTING FOR EXECUTIVE ESP

E. Douglas Dean and John Mihalasky

---

he co-authors have collaborated on a variety of projects, st notably in an extensive study of apparent extrasensory ities on the part of top-level business executives. Mr. an served as research director of the PSI Communications ject at the Newark College of Engineering, New Jersey, inning in 1962. As Professor of Industrial Engineering of College's Department of Industrial and Management gineering, Dr. Mihalasky was directly involved in the ESP jects. Mr. Dean's interest in parapsychology was initially used when he examined the statistical results of experi- nts by British researchers. He studied this work against his n background in the field of biochemistry and, as he puts "could not square this first-rate research work with my ntific training." This led to research at the Parapsychology boratory, Duke University, at the Parapsychology Founda- n in New York, and subsequently at the Newark College of gineering. This paper originally appeared in Psychic *(now* w Realities*), November-December, 1974, and has been htly expanded for this volume. The original text was copy- t © 1974 by Psychic Magazine Incorporated.*

---

he idea that successful company presidents run their inesses by using ESP might seem farfetched. Yet, in a -year research project at Newark College of Engineering found that the better presidents, defined as the ones who ke superior profits for their companies, rely more on ESP naking decisions for their companies than the less superior fit-making presidents.

n example of how ESP, especially precognition, can af- t a business decision was told to Dean by Lawrence nan, a New Jersey automobile dealer. In the summer of

1971 business was very slow. The public was not buying. H salesroom and lot were chock full of cars and he could n move them. Then the time came in June, 1971, when h would normally send in his next order for more cars. Again all logic he got out the order paper and was filling it in. H should have thrown the paper away, he said, but he foun himself filling it in for five times more cars than he had ev ordered before. This seemed insane, as his lot was full of h last order of cars. Logic told him to destroy the order pape but under some strange compulsion he sent it in to the man facturer. The enormous order of cars arrived by train ar truck transporter. He wondered if something had happened his mind. There was nowhere to put the cars, so he had to g out on the edge of town and rent a place to park them at very high fee. Then the bills came in. He had not paid th previous bills for the previous order. No one was buying car He thought he had gone crazy—that his days as a busines man were over. He just could not understand why he h done it. He began to think about bankruptcy.

But, on August 13, 1971, President Richard M. Nixon a nounced a 10 percent duty on foreign cars and the relax tion of the 7 percent tax on domestically produced cars. Wh happened then is history. The market changed complete around. The public flocked to the car dealers' showrooms ar bought cars with abandon.

Mr. Tynan sold out his previous order, and his succeedi five times larger order. He said that *he became a millionaire.*

Dean asked him a couple of questions:

"Did the manufacturer force you to take the five tim larger order because business was so slow?"

"Oh no, I did it voluntarily and thought I had gone cra sending the order in."

"If you had not ordered in June could you have placed t order and received the cars after President Nixon's announc ment?"

"No, no, all the other dealers wanted cars then and would not have got any. I had to do it when I did ev though it made me think I was mad."

So it seemed as though he was making the decision to o der so many cars based on unconscious precogniti knowledge of what was going to happen. This was despite t decision's making no sense at the time. It is a reasonable a sumption that even President Nixon did not know in Ju

t he was going to make the announcement on August 14,
ce controls were so very contrary to Nixon's beliefs.

Although such anecdotes prove nothing, they often give us
narkable insights into successful executive style. Then we
try and do experiments to prove it. In our book *Execu-*
ESP (Prentice-Hall, 1974) we have over one hundred
ilar stories and also statistics on tightly controlled com-
er tests confirming this idea.

Another good example comes from a *Wall Street Journal*
icle of November 17, 1969, by Roger Benedict. The State
Alaska was auctioning off land for oil drilling rights. The
rth Slope at Prudhoe Bay had proven out by drilling to
tain vast oil deposits. Atlantic Richfield and others in a
sortium had discovered oil. Several nearby tracts were up
auction, and other oil companies had combined into con-
tia to bid for them. The largest bid, of course, would win
rights. In particular, there was Tract 57, three square
es alongside the proven oil of the Atlantic tract. Mobil,
o and Phillips were in one consortium. Amerada Hess and
ty Oil were in another. There were others, but their bids
e small. Both consortia sent up geologists to Tract 57 to
pare geological maps and estimates of what to bid.

The result was strange. Both consortia decided in secrecy
t $70,000,000 would be right. Then both groups coin-
entally decided to add a safety factor and both groups
se 3 percent. However, something went wrong with the
hmetic. As was known later when the bids were opened,
original Hess-Getty bid was $72,100,000 and the Mobil-
o-Phillips bid was $72,200,000—so the Mobil group stood
win by only $100,000. Now 3 percent of 7 million is
6,000. Maybe the Mobil engineers rounded it up to
0,000 and Hess-Getty rounded down to $210,000; the
cle does not state. Regardless, as the bids stood, Hess-
tty was $100,000 behind.

Then on the weekend before the bids were to be opened,
n Hess got a feeling in the pit of his stomach that they
uld lose. He telephoned Getty executives and suggested
they raise the bid to $80 million. The Getty executives
used to go to Hess's new figure. Hess still had the "pain"
is solar plexus and pressured Getty to let the bid go up.
finally, to keep the peace between them, the Getty execu-
s compromised and raised the bid to a total of $72,300,-
. Thus when the bids were opened, Hess and Getty won
a paltry $100,000 on their final revised $72.3 million bid.

Hess's fussing would have looked pretty silly if the Mo Esso-Phillips' bid had been only $5 million as the third pl bid was. In fact, Mobil-Esso-Phillips did bid $41 milli on another tract and the second-place bid was only $5 milli $5,100,000 would have won it for them, but in secret b one does not know what amounts are offered. Or does c sometimes know like Hess seemed to know?

In the preceding case, ESP seemed to help Hess win w very little extra money; whereas, without ESP, Mobil-Es Phillips lost Tract 57 and also paid up to $35,900,000 m on the tract they did win.

There is one president who, in his autobiography, tells h he makes his ESP decisions. This is Conrad Hilton, who bu up the Hilton Hotel empire. In his book, *Be My Guest*, tells how he got his first hotel—the Stevens Hotel in Chica It had to be purchased by sealed bidding, which he did like. His first bid was $165,000, hastily made. Then, son how, that didn't feel right to him; another figure kept comi to his mind: $180,000. That felt right, so he changed his to $180,000. When the bids were opened, he had won o the next bid, which was $179,800. He had bought the Steve Corporation by the narrow margin of $200! To quote Conr Hilton: "I know when I have a problem and have done al can—thinking, figuring, planning—I keep listening in a s of inside silence 'til something clicks and I feel a right swer."

Hilton is a Roman Catholic. He states that when he has big decision to make—what hotel to buy next, where to bu one, how much to bid, which bank to get the money, wh to put in as manager of a hotel—he searches out the near Catholic Cathedral and goes in when there is no service A cathedral offers the right atmosphere for letting the psyc process occur. The high walls uplift the spirit; the quiet ables one to relax from the bustle of the day. Relaxation very important. Next is visualization of the exact decisi Third is listening for the answer, as mentioned above. Four and most essential, is *acting* on the answer no matter how rational to logic; he must act on the decision.

What are we to make of these stories? Is it ESP or n We became interested in finding experimental ways to t this in 1961.

When Dean was working for the Educational Testing Se ice in Princeton in 1955, he was writing College Board mission tests in chemistry, physics, and engineering. ETS a rted making admission tests for many other professions d received a grant to do a study of executives. Reading the S report, it occurred to Dean that top executives have to unusual people. They have to make the right decision for ir companies even when they do not have all the necessary ts. For instance, if all the known data bearing on a deci- n were fed into a computer and the computer made the cision, this decision would not be as good for making ney for the company as often as the executive's decision. e executive has to have some additional information which n come to him as precognition of future events. This we as- me the computer cannot do. Dean sent a memorandum to psychologist in charge of the Executive Study, suggesting t they add a couple of parapsychological precognition tests the psychological tests. He noted that people can fake psy- ological tests.

He was not alone in this view. The powerful influence of rsonality and psychological testing in hiring executives me under attack by *Fortune* magazine. *Fortune* gave stan- rd tests to fourteen corporate presidents and board chair- n and twelve leading scientists. They reported that “Not e corporation president had a profile that fell completely thin the usual ‘acceptable’ range, and two failed to meet the nimum profile for foremen.” The scientists fared even rse, testing out as “extremely misanthropic.” *Fortune* anded the tests as “a set of yardsticks that reward the con- mist, the pedestrian, the unimaginative—at the expense of exceptional individual whom management most needs to ract.”

The way to get the job was to cheat on personality tests. *rtune* advised, “Always give the most run-of-the-mill an- er possible . . . Role-play all the way and repeat firmly to urself such lines as, ‘I was a happy, normal American boy d everybody likes me. . . !”

But in parapsychological tests, particularly precognition, re is no known way of faking the response because the an- er depends on a future event. A person either knows it by P, or gets a chance result indicating no ability. But Dean's wngrading of psychological tests at ETS proved to be the s of death, and he was soon let go.

Finally, in 1962, he was able to put the idea to work when joined the Industrial and Management Engineering De- rtment at Newark College of Engineering. Dean's col- gues there, Robert Taetsch, who had just received a master's degree in management engineering, and Dr. John Mihalas a professor of management engineering, had organized a research project—the PSI Communications Project—invo ing computers. We were offered a rare opportunity to use guinea pigs a group of company presidents assembled by American Society of Mechanical Engineering. The occasi was a three-day conference in the Pocono Mountains at baronial Skytop Lodge. On the program committee was P fessor Oliver Sizelove, chairman of our department. He tried in vain to line up a speaker for Tuesday evening, but nally invited Dean to give a talk about ESP. At least it wou be good for a laugh. In those days as we went around college other professors would smile and make funny rema about ESP and the "nuts" who did this research.

But Taetsch and Dean took the talk to the presidents se ously. We designed a computer-scored test for precogniti Each of the sixty-seven presidents and their wives would handed three IBM cards of the port-a-punch type. Then ea person could punch holes in the cards corresponding with guess of a 100-digit number that a computer would gener randomly after the president made his guess. Finally, a co puter program would score the test.

To our delight, when we approached IBM to ask them lend us a computer and the other equipment, they compli immediately. The reason IBM went to such pains witho payment was plain. Presidents of companies are the peo who sign the checks for such things as computers. IB wanted their computer in front of the presidents and we sixty-seven of them.

The crucial morning Taetsch went up early to Skytop make sure that the computer was in readiness. Sure enoug was there along with four IBM engineers to make sure was well. But Taetsch found that the card input was da aged. It required spacing of plates to exact tolerances wh would take two days to repair. When Dean got there at n he just could not believe it. To get so far and then be bea by a mechanical failure!

He took the engineers into the lunch room and slamm his fist on to the table: "That computer *works* by eight P or else—all hell breaks loose!" After lunch they took off th coats, worked at it hard and long. Success came at 7:40.

Dinner was a glittering affair and it began to look as if might make it. Afterwards everyone moved to the test room where the computer was installed. But there was h

cy. What was this strange part of the Skytop program? An
P test? A computer? Many presidents hesitated and could
decide until the last minute to go into the room.

rofessor Sizelove introduced Dean, who explained what
wanted to do. But presidents are not the usual run of
ple. One man threw his board and missed Dean's head by
ouple of inches. Another threw his board on the ground
jumped on it. "No one gives me instructions on what to
" he shouted. "*I* give the instructions!" If it had not been
Professor Sizelove, wise in the ways of management, it
uld have blown up there.

The most important hypothesis we wanted to test out was
ed on work of Dr. Gertrude Schmeidler. She had found
t people who view time dynamically get better scores on
cognition tests than those who view it passively. She
ned the two modes of thinking about time as Dynamic-
sty versus Oriental-Passive, but we nicknamed it Hare ver-
Tortoise or Dynamic versus Nondynamic. Our thinking
s that strong, dynamic presidents were competitive, time-
noney, getting-things-done type people; they should score
ve chance. Strong nondynamics, on the other hand, would
mañana-oriented in their attitude, putting things off until
norrow; they should get scores lower than chance. We also
e curious whether or not the presidents believed in ESP.

Before the presidents punched their predictions, they were
ed to fill out a questionnaire on their belief in ESP and
ir attitude toward time. Those who chose the metaphors
ashing waterfall" and "Galloping horseman" would be
sidered dynamics; those who chose "A vast expanse of
" or "A quiet motionless sea" would be considered nondy-
nics. Those who chose "An old woman spinning" would
considered as Don't Know types.

n the 100-digit guessing test, 10 correct guesses would be
ected by chance. After the presidents punched their pre-
tions, the computer program reckoned their scores. Strong
amics averaged 11.3 percent and strong nondynamics 9.3
cent. Success. This is what we hypothesized. Their individ-
scores ranged down to 4 and up to 18, but showed a
ng "broken wing" effect that indicated ESP, not chance,
working. This "broken wing" effect means that they score
ier than chance when beginning the test and below chance
he end of the test. Also, to our surprise, we found that 48
of the 67 presidents believed in ESP. This is a ratio of
e to one in favor of ESP.

At the time, we found these results hard to believe. De
had once been fired from his job for holding ESP ideas. Y
here were men who were company presidents and nearly
had an engineering degree as well; men who made decisio
involving millions of dollars; involving hundreds of jobs
their company employees; involving thousands of shares
company stockholders. How could these men believe in ES
Perhaps they knew a psychic who had demonstrated it f
them? So Dean and Taetsch mingled with them to get at t
answer. "No, I do not know any psychics. I believe in E
for one reason—*because I use it.*" They only knew the
selves. They had facts about a decision but at times th
made a decision contrary to what the facts said. Later by hin
sight they would see that the ESP decision was the right o
and was making the company money; but the facts decisi
would have lost the company money. This was why they
lieved in ESP. They used other names, like hunch, six
sense, business acumen, or gut feeling, but the words
meant the same thing. No one had ever asked a group
presidents before and so had not found out.

Mihalasky then had the brilliant idea to see if the t
scores we had from the computer would relate to the abil
of the president to make good profits for his compa
Mihalasky had taught economics and industrial managem
for years at NCE. This made him dollar-conscious. If a p
son is a good manager, he should make good profits. C
tainly money isn't the only criterion, but it's the one t
shows up in black and white and doesn't involve subject
judgments. Yet anyone could make some profit in a go
economic period. We agreed to consider success as doubli
profits over the past five years. Mihalasky decided that f
years would be a good cutoff date since in that time an
ecutive should be out from under the effects of a predeces
and living off of his own decisions. So we sent out questio
naires asking the Skytop presidents about their company's
worth, assets, and profits and losses for the last five yea
The response was small. Some refused to give their na
some did not reply. Others said the information was sec
still others that such information was not kept that way.
out of 67 men we got only ten usable replies. Six had d
bled profits and four had not.

When we checked their scores on the precognition test,
were astounded. Of the six doublers, five scored above cha
and one right at chance. Of the four nondoublers, th

ored lower than chance and one higher. These results
emed unbelievably good. The scores of the profit doublers
eraged 12.50 percent while that of the nondoublers aver-
ed 8.75 percent. This meant that the doublers scored 43
rcent higher at precognition than did the nondoublers. Al-
ough the sample was too small to give statistical signifi-
nce—scientific proof—it was enough to convince us that
rapsychology could be of practical help in management
iences. Yet we needed another group of presidents to try to
nfirm this potentially very important effect.

Finally, three years later, Mihalasky managed to land a
oup of 45 enthusiastic presidents at the Shackomaxon
ountry Club in New Jersey. We arranged for a nearby com-
iter so that we could get the results back to the presidents
hile they were still at the meeting. Mihalasky also handed
it the profit questionnaire.

That night, however, we had one of the worst snowstorms
New Jersey's history. It took four hours to travel what usu-
ly took twenty minutes. We were unable to get to the com-
iter and thought we would have to abandon the test
together. However presidents are a different kind of people.
orty out of the 45 made it. The dinner and number punch
st went as expected, although we would have to wait until
ter to score the results, and send them to the presidents by
ail.

The results proved again astonishing. The dynamics aver-
ged 10.31 percent and the nondynamics 10.05 percent, again
nfirming our hypothesis. But what was most amazing was
at by a ratio of five to one the presidents believed in ESP.
uly presidents are remarkable people.

Even the profit-precognition relationship was confirmed. Of
ght presidents who had increased their profits by more than
0 percent, every single one of them scored above chance.
hen we pooled the results of the two presidents' groups, we
und that the profit doublers correlated with high scores and
e nondoublers correlated with low scores against odds of a
ndred to one.

In March, 1974, Mihalasky had an opportunity to test a
rd group of presidents. Forty-one members of the Steel
stributors Association participated in an experiment done
the posh Princess Hotel in Acapulco, Mexico. Of the 41,
even qualified for the category of "company president of at
st five years of tenure." Of the eleven, nine had at least
ubled their company profits over the past five years. Eight

of the nine scored above chance, with one scoring belo
chance. Their average was 11.44 percent. The remaining tw
presidents, who had not at least doubled their compa
profits, averaged 9.5 percent, with both scoring at chance
less.

The members of this group also had many episodes
relate about how they used hunch-intuition-ESP to aid the
in their decision making. Several members of this group h
national reputations among their colleagues for their abiliti
to "make predictions."

These results do not prove that precognitive ability a
profit making are *always* related; however they show that t
probability of getting a superior profit maker is much i
creased by choosing a man who scores well in precognitio
On the basis of our test results—19 out of 25 who scor
above chance were profit doublers—the probability of iden
fying a superior profit maker was better than three out
four. This is much better than standard psychological tes
can deliver. In addition, unlike psychological tests, this pr
cognition test cannot be faked. There is no logical way
knowing what random numbers the computer will produce
a future time.

Of what practical use is this research? For one thing,
provides the "hard," quantitative, objective data to suppo
the concept of decision making with the help of ESP. Ma
people—engineers, doctors, executives, and ordinary folk—
make decisions with the aid of ESP. But they are ashamed
afraid to admit to such unscientific methods. Our resear
provides the scientific support for their method, thus maki
them bold enough both to admit to the use of ESP, and
motivate them to use, and rely on, ESP more often. ESP ab
ity is sharpened by increased use and increased confidence.

Secondly, our research has resulted in the development a
application of a computerized test that can be used for mo
reliable selection of the superior candidate for the position
company president. After the presidential selection committ
has put the potential candidates through the usual psycholo
cal tests and interviews, they should also subject these cand
dates to our ESP test. The higher up the executive ladder
person progresses, the more his decisions will deal with t
future—the unknown—and the less valid, reliable, and ava
able will be the data that he uses to make his decisions.

This means that in addition to having a superior logical d
cision-making ability, the top executive also has the need f

n ESP component in his decision-making ability. It is the
gical component that gives rise to the *good decision*; but
at is assuming that the *good decision* leads to a *good out-*
ome. This is not so! It is the superior executive who can,
ith the help of his ESP ability, make a “poor decision,” an
llogical” decision, but arrive at the *good outcome*. Execu-
ves are not paid for good decisions but are paid for good
tcomes.

The PSI Communications Project has received numerous
quiries from business and industry about the use of our
SP test. To date it has been applied four times to companies
ross the United States. In one California company, the ESP
st recommendations agreed completely with the coincident
commendations made by the current company president
ho had a reputation of running a highly successful distribu-
g company through the use of intuitive decision making.
ther companies that have tried the test were in publishing
d electronics. Of course, it is too early to assess the profit-
aking ability of the recommended executives, but the test
s been commercially used, and a number of other requests
e currently being processed and negotiated.

Finally, what we have said about the use of ESP in deci-
on making for executives also applies to the decision mak-
g done by anyone and everyone. Most of us remember our
achers telling us “to stick with your first choice” when we
swered True-False quizzes. In effect, they were telling us to
t our subconscious be our guide. ESP is at the subconscious
vel also, so let it also guide us. Don’t be afraid to pay atten-
on to your “hunches.”

VII.

DREAMS AND PARAPSYCHOLOGY

TELEPATHY AND PRECOGNITION IN DREAMS

Martin Ebon

This paper was originally presented by the editor of this
ume, while serving as Administrative Secretary of the
apsychology Foundation, at an international conference
"The Dream and Human Societies," Royaumont, France,
ne, 1962, organized by the Near Eastern Center of the
iversity of California, Los Angeles. The paper may be
d as an introduction to the study on contemporary
earch in dream telepathy that follows it in this volume.
e proceedings of the Royaumont conference were pub-
ed under the title The Dream and Human Societies (*Uni-*
sity of California Press, 1966). Copyright © 1966 by Uni-
sity of California Press.

n dealing with the subject of parapsychological dream
dies, it is essential to define the concept of parapsychology,
delineate the areas of its current research, and to examine
specific scope of dream research within the parapsycho-
ical framework, its history, and its present achievements,
itations, and prospects.

Modern parapsychology has its origins in ancient and
mitive occult beliefs and practices, just as the modern
nces are indebted to the alchemists, just as medicine, spe-
cally, acknowledges the allegedly magical or miraculous
ling powers of saints and witch doctors. Parapsychology
remained close to traditions of the supernatural which re-
n as a strong but mostly unacknowledged residue within
own materialistic society. It has tried to apply up-to-date
ntific methods to verify, record, and analyze phenomena
do not seem to fit into the pattern of known scientific
s.

Modern parapsychology, just because it has as its subject matter what may be termed the supernatural, paranorma magical, or pseudomagical, is intent upon applying the mo rigid standards of documentation, experimental control, ar statistical evaluation available to current scientific researc Aside from criticism that it entertains and requests from no parapsychologists, parapsychology generally is much co cerned with self-criticism and subsequent refinement of i own methodology. This very tendency toward high standar of evidence and experimentation may, however, endanger tl delicate fiber of the phenomena that modern parapsycholo seeks to record, study, and, if possible, repeat.

Parapsychological dream studies cannot be entirely se arated from the general mass of research in parapsycholo or, as it has often been called, psychical research. Paraps chology owes a heavy debt to British researchers active du ing the second half of the nineteenth century. Often they we men of distinction in such diverse areas as public affai literature, theology, and the sciences. Their original researc undertaken through the Society for Psychical Research, Lo don, received its main stimulus from a desire to study tl possibility of the survival of the human personality aft bodily death. The leading researchers of the British Socie hoped to apply new methods of documentation to the ancie concept of man's immortality in order to achieve a union science and faith.

Much material of varied quality, but of undoubted ori nality and sincerity, emerged from these studies. As a b product, so to speak, other areas of more or less "occul phenomena were made the subject of investigations. The thus exists, accumulated during the past eight decades, a co siderable body of data concerning dreams in categories su as these:

1. the dream as omen, as a more or less supernatural in cation of certain critical events, present or future;
2. the dream as part of initiatory rituals, notably those shamanism;
3. a telepathic or precognitive quality of the dream, whi has been the subject of current research;
4. other areas in which the dream plays a major or min part linking it with the magical, supernormal, metaphysic or extrasensory.

It is specifically in the third category that modern paraps chologists seek to apply various scientific criteria to t

am. They are aware, of course, that these very criteria are
ntinuously undergoing tests concerning their general valid-
and their applicability to the phenomena with which they
concerned. In dream studies, as in various other parapsy-
logical research areas, the relative values of qualitative
quantitative studies are constantly being tested and exam-
d.

he dilemma of parapsychological dream studies, and,
eed, of virtually all other parapsychological studies, cen-
on the problem of capturing, so to speak, highly elusive
d presumably subjective) phenomena with the still rather
ited scientific tools at hand. By its very nature, the
rapsychological phenomenon depends on a constellation of
tors that are exceedingly difficult to anticipate or control,
virtually impossible to adapt to laboratory conditions.
leed, the verification of these phenomena often proves so
ficult that I am tempted, at the cost of sounding flippant,
use a somewhat primitive parable to illustrate this point.

The parapsychological researcher all too frequently faces a
ation that resembles the hunt for a mythical animal,
ose presence has long been "known," and which has just
en reported, once again, by a rather excited (and therefore,
course, not entirely trustworthy) witness. Let us assume
t a boy has just come into a remote, forest-ringed Asian
age, shouting that he has positively seen the famed and
led purple tiger. This animal, for our purposes, might be a
epathic or precognitive dream. Naturally, the villagers are
ch excited: at last, they feel, the elusive beast may be en-
cled, hunted down, trapped, and finally exhibited to prove
all doubters that it does, indeed, exist.

Teams of skilled hunters are assembled, wielding special
ps perfected in their trade; statisticians bearing computers,
if they were lighted torches; anthropologists, equipped with
ta of similar cases; psychologists, loaded down with Ror-
ach, Thematic Apperception, and Rosenzweig test ma-
ials; physicists with delicate instruments and charts; theo-
ians, bearing the wisdom and doubt of the ages; even
chopharmacologists, with the more esoteric products of
iss pharmaceutical firms; and physiologists with highly
cialized electroencephalographic equipment. Thus, with
mbeating and shouting, a ring is completed, and everyone
n high spirits, temporarily convinced that this time, surely,
purple tiger will be trapped, caged, and suitably exhibited
fore learned societies. The hunting party at last converges

upon the center of the forest. But, behold, their precious pre
has, once again, vanished.

To finish the parable appropriately, the assembled scientist
have little more to show for their pursuit than more or les
painful scratches on their academic reputation, and possibl
the makings of a learned paper, "Some Preliminary Observa
tions on the Trapping of Alleged Purple Tigers"; plus a grea
deal of controversy as to whether it might not be more sig
nificant, statistically, to trap several purple tigers instead c
only one inconclusive specimen.

And that, essentially, is the dilemma of the parapsychologi
cal researcher who seeks to observe and verify such phenome
na as telepathic or precognitive dreams, or who endeavors t
develop experiments and perfect methods of evaluation. Th
very attempt to "trap" the phenomenon, to measure or verif
it, may destroy it, may "scare it away." Indeed, the high emc
tional content of most "paranormal" dreams, the deep in
volvement of the dreamer, tend to make scientific apprais
extraordinarily difficult.

During the past few years, various associations in Europ
and the United States have sought to screen, verify, and eva
uate thousands of what parapsychologists call spontaneou
phenomena (apparitions, hunches, telepathic and precognitiv
experiences, or similar unplanned, nonlaboratory phenome
na), but they have found it virtually impossible to establish
fully proven, airtight case in the category of the precognitive
or even the telepathic, dream. That, on the surface, seems ur
likely; virtually everyone has experienced, or heard of, a sta
tling experience in this area. But parapsychologists admit tha
anthropologists and psychologists can find good raw materi
in subjectively reported, anecdotal material; they consider
their special task, however, to give documentation and verif
cation the highest priority.

Let me give you an example. Let us suppose that a news
paper reports on the case of a New York housewife wh
awoke her husband at two o'clock one morning, violent wit
fright, to tell him that she had dreamed their son had crashe
in a flaming aircraft near the U.S. Air Force base at San D
ego, California, where he was stationed. Early next mornin
she related this same dream to two other people, perhaps
the mailman and to a neighbor. Later in the day, or perhap
a day or two after, she received official notification that h
son had, indeed, been involved in an air crash; he may, ho
ever, have escaped the accident with no more than relative

ild injuries. The accident had taken place at 2 A.M. on the
ry morning that she had dreamed her frightening dream.

One would think that it should be relatively easy to
cument such a chain of events; that the woman's and hus-
nd's testimony could be tape-recorded; that the mailman
d the neighbor could sign appropriate statements; and that
Air Force notification, the official record of the accident,
d the attending physician's diagnosis of the son's condition
uld be made part of a conclusive case history. But as
rapsychologists specializing in the verification of spontane-
s phenomena will attest, it is highly unlikely that all such
cumentation can be obtained—mind you, not what the le-
l profession calls circumstantial evidence but actual airtight
rification. The time element may not check out; one or the
er of the witnesses will be vague in his recollection; or,
ite simply, the husband will not want his wife's psychic pe-
liarities to become a matter of public record. For one rea-
n or another, our mythical purple tiger will remain
trapped and uncaged.

These difficulties are not new. They were encountered by
thorough and conscientious British researchers who origi-
lly established standards for what should be regarded as
ridical in the documentation of psychic phenomena. These
ditions, I can assure you, are so ingrained that at least
e leading member of the British Society for Psychical
search carried his skeptical attitude over into a dream it-
f! Professor C. D. Broad, a former president of the society
d a distinguished philosopher at Trinity College, Oxford,
alls that he once dreamed of levitation, of floating within a
m and close to a fireplace. Within this very dream, he
ged himself to be thorough at all cost, and so he proceeded
float up to the fireplace, to take a heavy glass vase from a
lf above it and to place it on the floor as "evidence."

Professor Broad's scholarly predecessors included Edmund
rney, F. W. H. Myers, and Frank Podmore, whose classic
the field of spontaneous phenomena, *Phantasms of the Liv-*
, was published in 1866. From this volume comes one of
most frequently cited, because one of the most incongru-
, dream anecdotes on record. It is so odd, and so trivial,
t it is difficult to ignore. Mrs. Atlay, wife of the Bishop of
reford, dreamed that after reading morning prayers in the
l of the palace, she went into the dining room and found
enormous pig standing between the sideboard and the
le. She was so amused at this dream that she told it to the

children and their governess before prayers began. Afte prayers, she went into the dining room and there she found a pig standing, just as she had seen one in her dream. It had escaped from its sty while prayers were being read. In 1913 Dr. Frederik van Eeden developed nine dream classification based on 500 of his own recorded dreams; he reported on hi research in a lecture to the Society for Psychical Research.

Much case material concerning apparent telepathic an precognitive dreams was published in the *Proceedings* of th British Society, as well as in certain volumes of the *Journa of the American Society for Psychical Research.* Mrs. Henr Sidgwick published a long paper in the British publication, i 1922, bringing the 1886 volume of *Phantasms of the Livin* up to date.

Recently, fresh impetus to related studies was given by th Conference on Spontaneous Phenomena (Cambridge, England), organized by the London Society for Psychica Research and sponsored by the Parapsychology Foundation New York. From this meeting, several regional studie emerged, including surveys either completed or in progress i the United States, Great Britain, several Scandinavian countries, the Netherlands, Germany, Finland, and Austria. Th work in the United States was carried out by the America Society for Psychical Research, under the direction of D Gardner Murphy, now the Society's president, a forme president of the American Psychological Association, an director of research of the Menninger Clinic, Topeka, Kansas.

In all these, and in other studies, the methodological d velopment of parapsychology plays a significant part. Th work of the early British group and of Mrs. Sidgwick, for i stance, was largely qualitative in nature. In other words, centered around the collection of anecdotal materia strengthened by the apparent quality of each case to those e periencing it, and to the researcher weighing it against simil data. Efforts to design quantitatively oriented experimen were made in France by the physiologist and Nobel Pri winner Charles Richet. In the 1930's, however, parapsycho ogy received new impetus from the work of Dr. J. B. Rhin director of the Parapsychology Laboratory, Duke Universit Durham, North Carolina. Dr. Rhine developed means a techniques that lent themselves to the carrying out of labo tory experiments in extrasensory perception which could evaluated in a statistical, or quantitative, way. This involv

the most part, experiments with five cards, known as
er cards, to establish extrasensory perception (ESP). At
ent, there is a certain amount of reevaluation of parapsy-
ogical methods, and this has a specific impact upon cur-
and future dream studies. Such studies are now largely
e category of telepathic dreams (the dream incorporating
rent transfer of thought or impressions of information
n another person to the dreamer); the clairvoyant dream
which the dreamer apparently observes an image or situa-
directly by extrasensory means); the precognitive or
hetic dream (in which the dreamer seems to observe an
nt that will occur in the future). Dreams make up a large
nent of the phenomena classified as "spontaneous," al-
gh experiments are now under way in the United States
udy or induce such dreams under laboratory conditions.
pathic and precognitive dreams are among the relatively
t frequent and colorful case material now being studied
arapsychology.

is probably fair to say that the accumulated evidence in
r of precognitive dreams is much less voluminous, much
commanding, much less convincing than material con-
ing telepathic dreams. It is self-evident that a simulta-
us event is much easier to check than a subsequent event
may be subject to retrospective falsification of the orig-
procognitive dream or consciously or unconsciously
ipulated. On the other hand, precognized events may be
cipated and recorded quite accurately in many cases. For
remainder of this exposition, we mostly limit ourselves to
cussion of the allegedly telepathic dream.

t the Cambridge Conference on Spontaneous Phenomena,
ch tried to establish certain international criteria of
rding and evaluation, emphasis was placed on two as-
s: more stringent verification than had been possible or
mpted in the past; and an effort to elicit psychological as-
s that might help researchers to gain some understanding
he underlying psychodynamic elements, or interpersonal
tions that may favor the happening—the outburst, so to
k—of telepathic dream phenomena, as well as of other
taneous cases. But case histories that are sufficiently well
rded to permit psychological evaluation are rare. One of
e has been reported by Dr. Emilio Servadio (Rome),
se account may be summarized as follows:

n the night between the 23rd and 24th of April, 1955, a
en-year-old girl, whom I shall call Luisa, dreamed that

203/87

the mother of her fiancé, Guido, had on her finger a strang
silver ring. On the ring's surface were unusual signs, resem
bling hieroglyphics. The ring itself could be opened, and sh
thought that it contained a scent. On awakening, Luis
related her dream to her mother. A few hours later, she tel
phoned Guido and began to tell him of her dream. The
ancé, in great excitement, said that he had just returned
Rome from Milan, where he had bought a silver ring for h
mother. He had purchased it at the Somali Pavilion of the I
ternational Fair. The ring, he added, had a surface that cou
be opened, and strange writings were engraved on it. Heari
this, Luisa dropped the telephone and frantically called h
mother to confirm that all of these details had appeared
her dream.

Dr. Servadio's comments are as follows:

> Luisa and Guido are well known to me. All details were related to me immediately after the telephone call, and I recorded them carefully. I asked Luisa and Guido to read over my notes and they found them correct in every detail. Let us now reflect on the psychological setting for this apparent telepathic dream. Luisa and Guido were engaged to be married and very much in love. Their engagement was still unofficial, but Luisa was eager to become formally and publicly engaged to Guido. She looked forward to the day when he would present her with an engagement ring. Luisa's father had died when she was still an infant. She was brought up by her mother and also cared for by her mother's three sisters. No male figure played any prominent role in her childhood. Her mother remarried in 1951, when Luisa was eleven years old. In psychoanalytic terms, it is quite obvious that her Oedipus complex was quite notable. Luisa still had strong enthusiasms and passive-masochistic phantasies about outstanding men, and unfriendly attitudes toward her mother and maternal figures. She was aware of Guido's attachment to, and respect for, his own mother. She also knew that he would visit the Milan Fair. Possibly, she expected that Guido would bring her a present, which he actually did—although it was not a ring for her finger, but a pair of earrings. Probably because of oedipal at-

> tachment of his own, he selected a ring for his mother and not for Luisa. . . .
>
> One might say that, being emotionally attached to two women at the same time, Guido showed a preference for his mother by bringing her a ring, while selecting for Luisa a nice, but much less significant present. He probably had no intention of concealing from Luisa the fact that he had bought a ring for his mother. At this point, the interweaving in the pattern of relations between Luisa and Guido represented a very ambiguous ethical situation. The ring had become a focus of this very relationship, which had not become concrete (the engagement had not been publicized by an engagement ring) because of psychological obstacles. Luisa broke through this obstacle by means of telepathy. She was able to establish a temporary symbolism between Guido and herself, and to merge in an unconscious psychic world, which comprised them both. She was thus able to express, in a dream, her insurmountable rivalry toward the mother figure, including her hostility based on the fact that her own mother, and not she, had been subject to an experience involving engagement and marriage. Through the dream, she could tell her own mother of Guido's preference for his mother, and of the wrong he had thus done his sweetheart. . . .

case presented by Dr. Servadio, as happens often in
n telepathy and nondream telepathy, involves a crisis sit-
n. Much anecdotal material collected by anthropological
thnological researchers is also in the crisis category. We
acknowledge that there seems to be a pattern to this
of telepathic material, which points toward a piercing of
arriers restricting "normal" sensory communication: the
-induced need seems to bring about extrasensory com-
cation.

. Servadio's case was subjected to a Freudian interpreta-
Other psychological analyses may be possible. One work
ed to the recording and evaluation of spontaneous case
rial from the Jungian point of view is *Geisterererschei-
en und Vorzeichen (Apparitions and Omens)* by Mrs. Ani-
ffé, who analyzed more than one thousand cases that

had been made available to Dr. C. G. Jung by a pop magazine. All these were cases sent in by individuals who either experienced these phenomena or had heard of t more or less directly. While this work does not attemp verify the data, it is nevertheless a unique effort of appl psychological criteria to this type of evidence.

As noted, the American Society for Psychical Research engaged in an extensive study of such case material. A result of magazine publicity, it obtained a large numbe cases, from which Dr. Murphy, Mrs. Laura Dale, and N Rhea White have selected seventeen cases for presentatio the American Society's *Journal*. At about the same time, N Louisa Rhine, wife of Dr. Rhine, published a book, *Hid Channels of the Mind*. The research team of the Ameri Society compares its own selected cases—which it descri as meeting "the three minimum criteria of authentication with the much larger, but unselected group of cases repo by Mrs. Rhine. The three criteria referred to had been est lished originally by a widely experienced parapsycholog Mr. Fraser Nicol. He suggested that such an experie should be veridical in that it "related to an actual event t is occurring, had occurred, or would occur," that there "an independent witness who testifies that the percip related his experience to him before he came to know, normal means, that the experience had been veridical," that the experience should not be more than five years between the time of the experience and the reporting of The American Society, in developing the data it had reco ed, sought to employ the services of a psychologist for in view and evaluation purposes.

In England, the Society for Psychical Research had rep ed the results of its own survey in a volume of its *Proce ings*. This issue is entitled "Report (1959) on Enquiry i Spontaneous Cases." In line with Mrs. Rhine's approach, survey included the following two categories: the "unreali dream" symbolic in content, and the "realistic dream" wh "like a photograph of the actual event or fact, shows true tail, with no imaginative or embroidered addition." Some tistical conclusions were reached in this survey, but t numerical bases were narrow. It was found difficult to eng in psychological interviews. The report was compiled by Society's then research secretary. Miss Celia Green.

A comparatively ambitious survey was undertaken in G many, under the auspices of the Institute for Border Area ychology and Mental Hygiene, University of Freiburg im eisgau. The material was similar in quality and quantity to data collected in the United States and Great Britain. re, too, letters had been sent in by correspondents re- nding to news of the Institute's interest, conveyed by ra- , a newspaper, and magazine articles. The Freiburg titute investigated more than a thousand allegedly paranor- l spontaneous cases, including much dream material. The ults, divided by psychological and statistical aspects, were npiled by Dr. Gerhard Sannwald and published in the In- ute's quarterly journal, the *Zeitschrift für Parapsychologie d Grenzgebiete der Psychologie*. Experiences in the waking d dreaming state were evenly divided: 50.1 percent were ams, while 49.9 percent were waking experiences. Half the orted material was of a "realistic" rather than "symbolic" ture. Dr. Sannwald observed:

> The picture language of the dream, because it is a product of the unconscious, is often symbolic in nature. The surprising division of the dream data may be attributed to two reasons. To begin with, the relationship between a symbolically disguised dream and an actual event is not always recognized. That is to say, the symbolism is often elusive and the case is therefore not regarded as paranormal in nature. On the other hand, many of the experiences that are regarded as symbolically significant by the person reporting them are not so considered by the evaluator. These cases have thus only a limited chance of being incorporated into the case collection. In fact, among cases that are rejected, symbolic cases greatly outnumber realistic cases.

The German study also attempted to analyze the material terms of "conviction" or "nonconviction" of those report- the cases. Dr. Sannwald wrote that "a certain group of ple know immediately, with varying feelings of conviction, t an experience is related to a specific realistic event, that s 'meaningful.'" Very often, he continues, the original ex- ience creates a tension of expectation which is released en the expected event takes place; this, of course, refers to recognitive dream. This feeling is more in the nature of lief or release than a feeling of surprise." A second group people do not attribute any particular significance to an experience of a precognitive nature. These are then truly surprised or even shocked, particularly if they had previousl doubted or denied what they regarded as a "supernormal" experience.

Among the total number of cases recorded at Freiburg those reported as having been experienced with a feeling o conviction, which included the telepathic and precognitiv dreams, made up about 62 percent, while those reporte without a feeling of conviction came to about 38 percent. I may be interpolated here that a feeling of conviction and expectation probably tends toward an evaluation of a subsequent event in paranormal terms, although the overt similarit of the event to the original precognitive dream may be relatively slight. Furthermore, behind a professed feeling of "non-conviction" may well lie a hidden desire to experience th functioning of paranormal faculties. The surprise or shoc may, in such a case, be in the nature of unconscious camouflage of the recorder's basic attitudes.

Speaking specifically of precognitive experiences, th Freiburg study noted that 31.5 percent of such experience are reported as originating in dreams, while 20.6 percent ar reported to occur during the waking state.

Dr. Sannwald's effort to establish a psychological evaluation of the reported spontaneous cases was based on the ut lization of depth psychological criteria, designed to separat paranormal, or a-causal, phenomena from events that wer causal in origin. The writer cited the case of a woman wh dreamed of an appendectomy which, in fact, was performe on her a few days later. He also refers to a woman wh dreams of a motorcycle accident, a dream ignored by her so with laughter and derision, but nevertheless suffered by hi that very day. Dr. Sannwald notes that, in the first case, th woman may have been subconsciously aware that the appe dix was inflamed at the time of the dream; and in the secon case, the son's very defiance of his mother's warnings ma have created a psychodynamic situation that caused the acc dent anticipated in the dream. He adds that such cases a notable because of a possible psychological bias, or unco scious communication of feelings, experiences, and stimu that may "help to create an apparently precognitive dream."

From the German material, the following dream may al be cited:

> We did not receive news from my youngest

> brother for quite some time during the war. I then dreamed as follows: I stood before a high painting that was hidden by a curtain. I opened the curtain by pulling a cord. There, life-size, was a picture of my brother in full uniform. A delicate cloud of smoke rose from his left hand. The next morning, I told my mother, "Willy has probably suffered a slight wound in his left hand." Shortly afterwards, we received a postal card from my brother. He had scribbled on the margin, "I have been slightly wounded in the left hand."

Dr. Sannwald's interpretation of the factors contributing to
s particular dream refers to an underlying affective condi-
n, based on the fact that the girl was worried about her
ther, and that lack of news presumably deepened this anx-
y. Under these conditions, the evaluation continues, the ob-
t of her concern could well appear in a dream and she
ght also draw some parallel between her dream experience
d the possible link with actual fact. Even the interpretation
the cloud of smoke in terms of a wound should be
ribed to affect and anxiety. Nevertheless, Dr. Sannwald
served that "a telepathic element would seem to be indi-
ed," adding, however, that the brother-sister relationship
y encompass elements that would allow for a depth psy-
logical or psychoanalytic explanation; he wonders why she
s her brother as a painting that she "unveils," or why she
uld see a "cloud of smoke," rather than an actual wound,
od, or a surgical dressing. His observations illustrate that
ams apparently telepathic may be approached from a vari-
of psychological viewpoints.

A step in the direction of controlling dreams by experimen-
ion has been made at the suggestion of Dr. Montague Ull-
n (Maimonides Hospital, New York). In 1961, the
search Division of the Parapsychology Foundation began a
t study in New York, designed to explore the possibility
inducing telepathic elements in dreams. It was attempted
create laboratory conditions and to record phenomena,
ch until then had apparently appeared only quite spon-
eously. Dr. Ullman designed experiments that combined
ctroencephalographic recording with the rapid eye move-
nt (REM) technique. The experimental design was the
owing:

The subject (dreamer) spent a night in the laboratory, attached to an electroencephalograph (EEG). Electrodes wer attached to different parts of the skull and to the outer can thus in order to register electric potentials of the brain an the movement of the eyes. When the subject was asleep, th experimenter or another participant tried to communicate certain stimulus from another soundproof room, or perhap even from another part of town. This might be done by opening an envelope containing a picture of specific factual o emotional content. The picture was selected at random fro a collection built up for this purpose. It was unknown to bot participants.

When the rapid eye movement and a certain stage of brai waves indicated a dream, the subject was awakened throug an intercom system, asked to tell his dream, and his statements were tape-recorded. About four dreams were recorde nightly in this way. It was assumed that the subject's drea might contain some elements of the target picture that ha been used in the experiment. The EEG methods made it relatively easy to indicate the actual moment of dreaming.

Two levels of evaluation were used: *(a)* The data can b qualitatively evaluated in case studies; psychological evaluation can examine the relationship between telepathic stimu and actual dream content. *(b)* A quantitative rating metho can be applied: an independent judge receives the dreams o each night, together with ten different illustrations, only o of which is the picture actually used as the target picture; th judge does not know which of the ten was the target and thu must rate the individual illustration against apparent similarities to dream content. Ideally the target picture would recei the highest rate on the established scale. A variety of subjec were used in these experiments, and, in a new series undertaken in New York by Dr. Inge Strauch (Freiburg) during stay in New York in 1962, various refinements in technique in the selection of subjects, and in evaluation methods we introduced, including biographic-psychological information subjects and further psychological interviews after ea night's session. This work is continuing; it will require furth refinements, repetitions by other researchers, and the integration of new findings in psychology, physiology, and oth scientific areas.

Such dream experiments illustrate both the dilemma a the challenge that parapsychological studies face today. Th are conscious of the strict requirements of experimental controls, the need for repetition, careful design, and executio the same time, the fabric of parapsychological phenomena good deal more delicate than are the phenomena examd in the natural sciences. Parapsychologists must, for innce, be aware that the experimenter himself may play a tle but influential role in the experiment he conducts.

Beyond this, however, man's dreams have retained, even in supposedly rational civilization, an aura of the otherrldly; man, dreaming, is somehow believed to be in touch h worlds outside his daily ken, even if these be the worlds his own unconscious. In dreams, we meet the archaic lange of symbols; we are in touch with our ancient traditions myth, or with our childhood wishes and fears; our dreams ect the pressures and hopes of our daily lives, and are thus uliarly sensitive to manipulation and observation.

Parapsychological dream studies call for these unusual lities of research: detached, scientific, cerebral preparation l execution of investigation or experiment; sensitive undernding of the delicate, the deeply emotion-laden, tradition magical that may lie at the root of not yet understood enomena. To strike a balance between detachment and unstanding, between the scholar's role as outsider and as parpant—that is the challenge that gives this work its unique, nanding quality.

REFERENCES

Bender, Hans, and John Mischo. "'Praekognition' in Traumserien." *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie* (Freiburg im Breisgau, Institut für Grenzgebiete der Psychologie und Psychohygiene), Vol. 5, No. 1, 1961, 114-201.

Broad, C. D. "Dreaming, and Some of Its Implications." *Proceedings of the Society for Psychical Research* (London), Vol. 52, Part 188, 1959, 53-78.

"Conference on Spontaneous Phenomena, July 11 to 17, 1955." *Proceedings of Four Conferences of Parapsychological Studies*. New York: Parapsychology Foundation, 1957, 101-103.

Dale, Laura A., White, Rhea, and Murphy, Gardner. "A Selection of Cases from a Recent Survey of Spontaneous ESP Phenomena." *Journal of the American Society for Psychical Research* (New York), Vol. 56, No. 1, 1962, 3-47.

5. Gurney, E., Myers, F. W. H., and Podmore, F. *Phantasms of the Living.* 2 vols. London: Trubner, 1886.
6. Jaffé, Aniela. *Geistererscheinungen und Vorzeichen.* Introduction by C. G. Jung. Zurich: Rascher, 1958.
7. Myers, F. W. H. "The Subliminal Self." *Proceedings o the Society for Psychical Research* (London), Vol. 11 1895, 487ff.
8. "Report (1959) on Enquiry into Spontaneous Cases. *Proceedings of the Society for Psychical Research* (London), Vol. 53, Part 191, 1960, 83-194.
9. Rhine, Louisa E. *Hidden Channels of the Mind.* Ne York: William Sloane, 1961.
10. Richet, Charles. *Thirty Years of Psychical Researc* London: Macmillan, 1923.
11. Saltmarsh, H. E. *Foreknowledge.* London: G. Bell Sons, 1938.
12. Sannwald, Gerhard. "Statistische Untersuchungen a Spontanphänomenen." *Zeitschrift für Parapsychologi und Grenzgebiete der Psychologie* (Freiburg im Breisgau, Institut für Grenzgebiete der Psychologie und Psychohygiene), Vol. 3, No. 1, 1959, 59-119.
13. ———. "Zur Psychologie paranormaler Spontanphänomene." *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie* (Freiburg im Breisgau, Institut für Grenzgebiete der Psychologie und Psychohygiene), Vol. 3, Nos 2, 3, 1960, 149-191.
14. Servadio, Emilio. "Telepathy: a Psychoanalytic View. *Tomorrow*, Vol. 4, No. 2, 1956, 35-41.
15. Sidgwick, Eleanor Mildred. *Phantasms of the Living Cases of Telepathy Printed in the Journal of the Societ for Psychical Research during Thirty-five Years.* Bound i one volume with *Phantasms of the Living* by E. Gurney F. W. H. Myers, and Frank Podmore. Abridged an edited by E. M. Sidgwick. Introduction by Gardner Murphy. New Hyde Park, N.Y.: University Books, 1961.
16. Van Eeden, Frederik. "A Study of Dreams." *Proceeding of the Society for Psychical Research* (London), Vol. 26 Part 67, 1913, 437-461.

EXPERIMENTAL DREAM STUDIES

Montague Ullman and Stanley Krippner

'or approximately a decade, from the mid-1960's to the
'-1970's, experiments in dream telepathy were among the
't prominent to be undertaken in parapsychology in the
'ted States. Dr. Ullman was then Chairman of the Depart-
it of Psychiatry, Maimonides Medical Center, Brooklyn,
v York, and Dr. Krippner was director of the depart-
it's Dream Laboratory. Ullman has also served as
sident of the American Society for Psychical Research; in
5/76, he conducted courses on psychotherapeutic tech-
ue at the University of Göteborg, Sweden. Krippner is
affiliated with the Humanistic Psychology Institute, San
ncisco. (See also Dr. Krippner's paper, "The Interface Be-
en Parapsychology and Humanistic Psychology," else-
re in this volume.) This paper, presented to the American
ociation for the Advancement of Science, 1971, has not
n previously published.

---

he Maimonides Dream Laboratory has been devoted to
experimental replication under carefully controlled condi-
s of anecdotal and clinical accounts bearing witness to the
urrence of telepathic and precognitive dreams. Last year
70] at the meeting of the AAAS we presented the results
our work on the telepathic dream. Nine studies were re-
ed differing somewhat in design but each geared to test
hypothesis that target material could be programmed into
dreams of sleeping subjects or into the induced dreams of
notic subjects. Six of the nine studies yielded statistically
ificant results. The basic design involved an agent or send-
n an acoustically isolated room attempting to telepath-
y transmit a randomly selected target picture (generally a

reproduction of an art print) to a sleeping subject in anothe
room whose dreams were monitored electroencephalograph
ically. The results were then evaluated on the basis of a blin
matching by three independent judges of the dream protocol
elicited and the target pictures used over the different night
included in the study.

This paper will present two additional studies dealing wit
the investigation of the precognitive dream and will the
summarize the conclusions we have drawn to date from th
completed studies.

First Bessent Study

Malcolm Bessent, an English "sensitive" with a history c
spontaneous precognitive experiences, was selected as Subjec
(*S*) for this study. Standard EEG-EOG techniques were em
ployed to detect Stage REM. *S* was tested on eight nonconsec
utive nights.

A Recorder (*R*) remained in an isolated room all nigh
and had no contact with *S* or with the Eperimenters (*Es*
until the following morning. Once the dreams had been co
lected and the post-sleep interview had been terminated, an
randomly selected a sealed envelope containing a page num
ber to Hall and Van de Castle's *The Content Analysis* c
Dreams. Another *E* selected, by random means, anothe
number; both numbers were presented to *R*. Locating th
page in the Hall–Van de Castle book, *R* noted the conter
item specified by the second number. Using this item as th
"key word," he selected an art print (from a pool of sever
hundred) which portrayed this word. In addition, he create
a multisensory environment around this word, using iten
which were directed to visual, auditory, gustatory, olfactor
and haptic senses. *R* wrote a description of this multisenso
environment and presented it to a clerical assistant who mac
several copies of it for future reference. At this point, *R* si
naled the *E*s to bring *S* into his room; *S* proceeded to have a
experience in the specially constructed multisensory enviro
ment.

To determine whether *S* had precognitive dreams about h
morning's experience in the multisensory environment thr
outside judges (*J*s), working blind and independently, rate
correspondences between each dream protocol and *R*'s wr
ten descriptions. The means of the *J*s' ratings were subjecte

binomial testing. There were five direct hits out of the t nights (CR = 3.74, p = .0002, two-tailed).

mple #1

get word: Corridor.

get picture: "Corridor of the St. Paul Hospital," a painting by Van Gogh (The picture portrays a lone figure in the corridor of a mental institution constructed from concrete. The predominant colors are orange, green, deep blue, and white.)

get experience:

ditory: Rosza's "Spellbound" played on the phonograph.
R laughing hysterically in the background.
R will welcome *S* as "Mr. Van Gogh."

ual: Paintings by mental patients will be shown by slide projector.

te: *S* will be given a pill (niacinamide) and a glass of water.

ell: *S* will be "disinfected" with acetone daubed on cotton swab.

ptic: *S* will be led through a darkened corridor of the lab to reach *R*'s office.

st Dream Report: ". . . My impression is of *green and purple* . . . . small areas of *white and blue*."

ond Dream Report: "There was a *large concrete building. A lot of concrete*, for some reason. It seemed to have importance. But it was architecturally designed and shaped . . . and *there was a patient from upstairs escaping. . . . This patient from upstairs*, I'm not sure it was a 'he.' It might have been a woman. . . . *She had a white coat on, like a doctor's coat*, and people were arguing with her on the street."

rd Dream Report: "Kind of a feeling. Not a feeling exactly, but a rumor . . . of *hostility* toward me by people in a group I was in daily contact with. . . . I wasn't actually experiencing it, the actual *hostility*, I mean. . . . My impression was that they were *doctors and medical people*. . . ."

Fourth Dream Report: "I was dreaming about . . . breakfast. . . . The cups were all white. . . . *Drinking*. . . Eating. . . . It was all in color. . . ."

Post-Sleep Interview, First Dream Report: ". . . I had the feeling that I was happy and you were happy. . . ."

Post-Sleep Interview, Second Dream Report: ". . . *The concrete wall was all in natural color*, you know, sort o *sandy color*. . . . It's rather like a carved wall, no large. . . . *I felt that a Negro patient had escaped* . . *or just walked out, and that to do this, he or she* . . *had put on a doctor's white coat and got as far as* . . *the archway*. . . ."

Post-Sleep Interview, Third Dream Report: ". . . I wa aware of an impression of *hostility*. . . . Something had done aroused *hostility* in people. It had to do with my work, and I think *all the people were medical*. . . My impression was of having done something which caused some kind of feeling of resentment . . . *and i was sort of the hostility that caused them to think o say, 'Get rid of him.'* "

Post-Sleep Interview, Fourth Dream Report: ". . . All th cups and things were rattling. . . . They were all *drinking out of glasses* . . . ."

Guess for the Night: ". . . My impression is sort of a . . feeling of *people talking*. . . ."

Second Bessent Study

Malcolm Bessent was again selected as *S* for this sixteen night study. One year previously he was the single *S* in a eight-night study of precognitive dreaming in which statistically significant results were obtained.

A "target pool" of ten sound-and-slide sequences wa created for the study. On night 1, *S* was instructed to drear about the target which would be randomly selected the following evening. On night 2, one of the 10 sequences was randomly selected and *S* was exposed to the slides and the tape d accompaniment. He was then told to attempt dream- bout the target material.

hree outside *J*s, working blind and independently, were sed to the eight sound-and-slide sequences which had selected for use. In addition, they read all 16 dream ocols. *J*s rated all the protocols against all eight targets, a of 128 pairings.

hen the odd-numbered (i.e., precognition) nights were cted, it was found that they had received higher ratings any of the other pairings for that target in five out of cases (CR = 3.74, p = .0002, one-tailed). When the correct even-numbered (i.e., post-experience) nights inspected, it was found that they had not received er ratings than any of the other pairings for that target; ever, there was one tie. Analysis of variance also pro- d significant results for the odd-numbered nights (F = p = .005) but not for the even-numbered nights.

other words, this study produced data strongly support- the precognition hypothesis. Further, in the case of this cular *S*, the precognitive effect demonstrated a greater in- ce on dream content than did the effect of the experi- itself.

mple #2

et sequence: Slides of birds accompanied by recorded bird call

Dream Report: "I was having a nice dream. It was with some doctors. It was an informal meeting. . . . *We looked into the sky. There was a dark blue color in the sky.*"

nd Dream Report: "I was dreaming about an analysis I had made in my previous dream. I was about to hand it over to some doctors to see what would happen. . . . *The color blue is very strong.*"

d Dream Report: ". . . It involved Bob Morris. *His experiments with birds.* The general reaction to him would be of interest, I felt . . . I felt that once the target was seen, it would explain everything. The target is of emotional interest to Bob Morris. *The color of deep blue is important. The sea or the sky.*"

Fourth Dream Report: "I don't remember anything. . . ."

Post-Sleep Interview, First Dream Report: ". . . *dark bl* *colors*. An informal meeting with doctors. . . ."

Post-Sleep Interview, Second Dream Report: "This is a cc tinuation of the first dream. In the first dream I had been able to complete the task that I was involved and in the second dream . . . I came back with a mc satisfactory conclusion to the task in that I had analyz the conversation and . . . I was on my way to take tl to Chuck Honorton as he'd requested it initially. . As I was talking just now, I had an impression of myse going to Chuck to tell him this stuff and I had an enc mous sack on my back which was stuffed full of lette like a mailman, and yet the sack was complete weightless. . . . *Something important happened arou water*, whether to Chuck or to somebody in l family. . . . *Everything was blue. . . . It was as there was a blue light, almost, so that everything, though you knew it really wasn't blue*, appeared to blue. . . ."

Post-Sleep Interview, Third Dream Report: ". . . Bob Mor does research on animal behavior and, more specifical birds. . . . He's been doing various research and stud with birds and he's taken me out to see his sanctua place where all the birds are kept. . . . I rememl seeing various different kinds of doves. Ring-tai doves, ordinary doves, Canadian geese. There w many, many different kinds of varieties. . . . I just sa 'Oh, well, you'll understand everything when you see t target. I don't have to explain it now. It's self-explar tory, so you'll have to wait a while.' "

Post-Sleep Interview, Fourth Dream Report: ". . . *The o thing I think of is just water. Just a lake of water. . Kind of greeny-blue. . . . A few ducks and things. fairly misty, but there are quite a lot of mandrake ge and various birds of some kind swimming around rushes or reeds. . . . Birds. . . . I just have a feel that the next target material will be about birds.*"

Post-Sleep Interview, Main Theme: ". . . It's interesting a because *I wrote a poem a couple of days ago about freedom and birds, and the last couple of lines were . . . 'Even birds aren't free; they have gravity to contend with.'* "

Discussion

n reviewing results of both the pilot and the formal ies completed thus far, our findings support the following statements:

Two initial studies support the hypothesis that telepathy be demonstrated in a laboratory setting. Of the eight nal experimental studies involving attempts for Agent and *S* to communicate telepathically through *S*'s night- dreams, significant results have been obtained in five in- ces (Ullman, Krippner, and Feldstein, 1966a; Ullman, pner, and Feldstein, 1966b; Ullman and Krippner, 1969; pner and Ullman, 1970; Honorton, Krippner, and Ull- , 1972). Significant results were also obtained in two pi- "long distance" telepathy experiments, one a four-night s involving eight *S*s (Krippner, Honorton, Ullman, Mas- and Houston, 1971) and one a six-night series involving *S*s (Krippner, Honorton, and Ullman, 1973). An analy- f the first night spent by each of the 83 *S*s to participate lepathy experiments between 1964 and 1969 produced ificant data; indeed, there were 64 telepathic "hits" and misses" (Ullman, Krippner, and Honorton, 1970). Of attempts to replicate the Maimonides experiments, one been successful (Hall, 1967), two have been unsuccessful vedere and Foulkes, 1971; Strauch, 1965), and one has uced equivocal results (Globus, Knapp, Skinner, and y, 1968). All four studies represented the investigators' l attempts to study this phenomenon and it is difficult to ecture what the results would have been if a long-range s had been planned. In any event, there are now enough controlled studies in the professional journals to support view that telepathy in dreams can be demonstrated in a atory setting.

The elements of orientation, expectancy, and volition ar to be necessary for extrasensory effects to occur in ns. During 1966, a number of pilot sessions were run in h *S* was not told that an *A* would attempt to influence reams telepathically; these sessions were devoid of target-dream correspondences. In a four-night pilot study, ar was told to attempt to dream about a randomly selected print placed in a box attached to the ceiling of his room. the same time, an *A* was attempting to telepathically trans a different picture—but without *S*'s knowledge. Direct targ dream correspondences were detected by *J*s on all four nig of the study for the clairvoyance targets but on only c night for the telepathy targets. These results suggest that c entation, expectancy, and volition are necessary for ESP occur in experimental dream studies (Krippner and Zirins 1971). Another pilot study which studied this factor involv two *S*s and 2,000 *A*s. *A*s were ticket-holders to six conce held by "The Grateful Dead," a rock-and-roll musical grou At 11:30 P.M. each night, the audience was exposed to a s slide sequence projected on a large screen:

1. You are about to participate in an ESP experiment.
2. In a few seconds you will see a picture.
3. Try using your ESP to "send" this picture to Malco Bessent.
4. He will try to dream about the picture. Try to "send' to him.
5. Malcolm Bessent is now at the Maimonides Dream L oratory in Brooklyn.
6. At this point, a randomly selected art print was proje ed on the screen. Without the *A*s' knowledge the drea of a second *S* were also collected. However, *J*s' eva ations of target-dream correspondences were only s nificant in the case of Malcolm Bessent, the *S* tow whom *A*s were oriented to "send" the target mate (Krippner, Honorton, and Ullman, 1973).

3. *Male subjects have been more effective telepathic ceivers in the dream experiments than female subjects.* tween 1964 and 1969, 55 experimental sessions and 79 p sessions had been completed in which telepathy was atter ted between an *A* and a sleeping *S*. For these 134 nightti sessions, a total of 14 male *A*s, 41 male *S*s, 9 female *A*s, 33 female *S*s were included. A statistical analysis was formed on the first night each *S* attempted telepathic inc poration, reducing the number of available sessions to 74. all, there were 52 telepathic "hits" and 22 "misses" on basis of *J*s' evaluations; this distribution is statistically sign cant. When a male served as *S*, there were 31 "hits" and "misses," which is significant. When a female served as

e were 21 "hits" and 12 "misses," a distribution which is
statistically significant. It was further found that male *S*s
uced as significant results when paired with a male *A* as
n paired with a female *A* (Krippner, 1970). The basic
on for this finding is unknown but may relate to findings
. Hall and Van de Castle, 1966) that male dreams con-
more aggressive and sexual material than female dreams
to studies (e.g., Lawrence and Shurley, 1970) demon-
ing that males are more willing than females to volunteer
dream studies. A more complete dream report would, of
se, give *J*s more information in making their target-
nt evaluations; in view of the observation that aggressive
sexual material is often linked with ESP in dreams (Ull-
, 1970), a full, uninhibited report would be necessary to
al this material.

*Telepathic effects have occurred in dream experiments
n subject and agent have been separated by 96 feet, 14
s, and 40 miles.* A formal investigation of distance effects
lepathic dreams has never been attempted. However, dis-
e has been no impediment in the studies already con-
ed. Most of the experimental series have involved a
nce of 96 feet between *A*'s room and the sleep room
man and Krippner, 1970). However, significant results
also obtained in a pilot study in which *A*s and *S*s were
rated by 19 miles (Krippner, Honorton, Ullman, Mas-
and Houston, 1971) and another one in which the dis-
e was 40 miles (Krippner, Honorton, and Ullman,
). Indeed, some of the most vivid target-dream corre-
dences have occurred in the studies involving a separa-
of several miles between *A* and *S*.

*Target stimuli that are emotional in nature appear to be
e effective than nonemotional material in the dream ex-
ments.* In surveying target material used in the telepa-
dream experiments, Ullman (1970) was struck by the
ihood that art prints most apt to be incorporated in *S*s'
ms were those which "could most readily evoke
rgency response mechanisms relating to either individual
ival or survival of the species. . . . Targets with clear
al and aggressive themes appeared to evoke correspond-
imagery and feeling in the dreams of the percipient." A
al analysis of target material has been made, using the
night spent in the laboratory by 83 telepathy experiment
Krippner and Zeichner, in preparation). The instrument
for this analysis was the 300-item Adjective Check List

(Gough and Heilbrun, 1952). Three *J*s evaluated each of
83 target pictures with this instrument; their evaluations w
used to compare targets producing telepathic “hits” agai
targets associated with “misses.” Adjectives which differen
ated between “hits” and “misses” included “adventurous,” “
gressive,” “assertive,” “daring,” “dominant,” “energeti
“masculine,” “strong,” and “tough,” all of which were asso
ated with “hits.” Adjectives which typified many targets
which did not discriminate between “hits” and “misses”
cluded “attractive,” “charming,” “feminine,” “gentle,” a
“silent.” On the basis of these findings, and similar reports
other investigators (e.g., Moss and Gengerelli, 1967), a pi
study was run in which *A* looked at an art print during
session and, during another session, utilized “multisenso
materials in association with the art print. For example,
one occasion, *A* looked at an art print by Daumier, “T
Pork Butcher.” For another session, randomly arranged,
looked at the art print, opened a canned ham, sliced it, a
ate it. Target-dream correspondences of the two *S*s used
this study received more favorable *J* evaluations when “m
tisensory” materials were used than when the art print al
was utilized (Krippner and Goldsmith, 1971). “Multis
sory” target material (always involving visual and audit
material and sometimes including gustatory, olfactory, a
tactile-kinesthetic material as well) was used in two ad
tional ESP pilot studies (Krippner, 1971; Krippner, Hon
ton, Ullman, Masters, and Houston, 1971) and three form
ESP experimental studies (Ullman and Krippner, 19
Krippner, Ullman, and Honorton, 1971; Krippner, Honort
and Ullman, 1972), all of which yielded statistically sign
cant results. Therefore, the importance of emotional invol
ment on the part of *A* has been demonstrated both
selection of potential targets with themes that are “asserti
“energetic,” etc., and by the inclusion of “multisenso
material for *A* to work with.

6. *Precognition in dreams has been demonstrated in a*
oratory setting. Spontaneous examples of precognition
dreams have been noted in the Maimonides Laboratory si
its inception (Krippner, 1969). For example, on May
1965, *S* had the following dream:

“I was dreaming that the experiment was over and tha
was getting ready to leave. And there was a friend of mi
Harold, whom I haven't seen for about twenty years—ol

ess well over twenty years. And he was in the dream. He as being set up for the next experiment.”

S referred to this dream in the post-sleep interview:

“Some of the things in the dreams were about things that d happened years and years ago. . . . It seems to me it's ite some time that I've had dreams that really seem to ve taken place about twenty years ago. . . . I remember ere was a chap that I hadn't seen for about twenty years or —I guess more than that—by the name of Harold, who s being set up for the next experiment.”

A week later, the subject wrote the laboratory staff this letr:

“This is to inform you that as ‘predicted’ in my dream of t Friday night I met a friend of mine named Harold. I was a restaurant rather out of the area where I usually eat. I s sitting with an acquaintance and had just told him of the eam and that I had not seen Harold for about twenty ars, since high school. I had been saying that, since Harold emed to have no integral part in my dreams, I expected to eet him momentarily. We got up to leave and there, standg in the line near the doorway, was Harold. (I had been ated facing away from the door.) I tapped him on the arm d informed my friend that this was the fellow I had just ld him about. Harold recalled that we had met in passing at wisohn Stadium some time since high school, but I don't member the incident. I haven't been there for many years, yhow. If there is any more that I can tell you about it, ease let me know.”

Several months after this incident, one of the Maimonides ff members was lecturing on telepathy and dreams in Hungton, New York. A member of the audience came up after e lecture and introduced himself. He had been S's friend in e restaurant episode and corroborated the story of the enunter with Harold. With the inception of the Central Preonitions Registry in Manhattan (Nelson, 1970), a clearing use was available for those individuals who had presumly precognitive dreams and wanted to place them on cord. One of the individuals with the most consistent record “hits” was M. Bessent, whose services as S were obtained Experimental Series XI (Krippner, Ullman, and Honorn, 1971) and Experimental Series XII (Krippner, Honorn, and Ullman, 1972). These studies, based on proposals by unne (1926) and Jackson (1967), demonstrated, at statistilly significant levels, that precognition in dreams could be

demonstrated in a laboratory setting—in the case of at leas
one *S*.

REFERENCES

1. Belvedere, E. and Foulkes, D. "Telepathy and Dreams:
   A Failure to Replicate." *Perceptual and Motor Skills*
   Vol. 33, 1971, 783-789.
2. Dunne, J. W. *An Experiment with Time*, 3rd ed. London: Faber, 1926.
3. Globus, G. G., Knapp, P. H., Skinner, J. C., and Healy
   G. "An Appraisal of Telepathic Communication i
   Dreams." *Psychophysiology*, 1968, Vol. 4, 365.
4. Gough, H., and Heilbrun, A. *The Adjective Checklist*
   Manual. Palo Alto: Consulting Psychologists Press, 1965
5. Hall, C. S. "Experiments with Telepathically Influence
   Dreams." *Zeitschrift für Parapsychologie und Grenzge*
   biete der Psychologie, 1967, Vol. 10, 18-47.
6. Hall, C. S. and Van de Castle, R. L. *The Content Analy*
   sis of Dreams. New York: Appleton-Century-Crofts, 1966
7. Honorton, C., Krippner, S., and Ullman, M. "Telepathi
   Transmission of Art Prints under Two Conditions." In E
   Mallinoff, ed., *Proceedings*, 80th Annual Conventio
   American Psychological Association. Washington, D.C.
   American Psychological Association, 1971, 319-320.
8. Jackson, M. P. "Suggestions for a Controlled Experimen
   to Test Precognition in Dreams." *Journal of the Amer*
   ican Society for Psychical Research, 1971, Vol. 61, 346
   353.
9. Krippner, S. "The Paranormal Dream and Man's Pliabl
   Future." *Psychoanalytic Review*, 1969, Vol. 56, 28-43.
10. Krippner, S. "Electrophysiological Studies of ESP i
    Dreams: Sex Differences in Seventy-Four Telepathy Ses
    sions." *Journal of the American Society for Psychical Re*
    search, 1970, Vol. 64, 277-285.
11. Krippner, S. "'Clairvoyant' Perception of Art Prints i
    Altered Conscious States." *Proceedings*, 79th Annual Co
    vention, American Psychological Association. Washing
    ton, D.C.: American Psychological Association, 1971.
12. Krippner, S., and Goldsmith, M. "A Multi-Sensory Ap
    proach to Telepathy Communication in Dreams." *A.R.*
    Journal, 1971, Vol. 6, 183-186.
13. Krippner, S., Honorton, C., and Ullman, M. "A Secon

Precognitive Dream Study with Malcolm Bessent." *Journal of the American Society for Psychical Research*, 1972, Vol. 66, 269-279.

Krippner, S., Honorton, C., and Ullman, M. "An Experiment in Dream Telepathy with the Grateful Dead." *Journal of the American Society for Psychosomatic Dentistry and Medicine*, 1973, Vol. 20, 9-17.

Krippner, S., Honorton, C., Ullman, M., Masters, R. E. L., and Houston, J. "A Long-Distance 'Sensory Bombardment' Study of ESP in Dreams." *Journal of the American Society for Psychical Research*, 1971, Vol. 65, 468-475.

Krippner, S., and Zirinsky, K. "An Experiment in Dreams, Clairvoyance, and Telepathy." *A.R.E. Journal*, 1971, Vol. 6, 12-16.

Krippner, S., and Ullman, M. "Telepathy and Dreams: A Controlled Experiment with Electroencephalogram-Electro-Oculogram Monitoring." *Journal of Nervous and Mental Disease*, 1970, Vol. 151, 394-403.

Krippner, S., Ullman, M., and Honorton, C. "A Precognitive Dream Study with a Single Subject." *Journal of the American Society for Psychical Research*, 1971, Vol. 65, 192-203.

Lawrence, B. E., and Shurley, J. T. "Napping Habits of a College Student Population." *Psychophysiology*, 1970, Vol. 1, 294-295.

Moss, T., and Gengerelli, J. A. "Telepathy and Emotional Stimuli: A Controlled Experiment." *Journal of Abnormal Psychology*, 1967, Vol. 72, 341-348.

Nelson, R. D. "The Central Premonitions Registry." *Psychic*, 1970, Vol. 1, 26-31.

Strauch, I. "Dreams and Psi in the Laboratory" In R. Cavanna, ed., *Psi Favorable States of Consciousness: Proceedings of an International Conference on Methodology in Psi Research*. New York: Parapsychology Foundation, 1970, 46-54.

Ullman, M. "The Experimentally-Induced Telepathic Dream: Theoretical Implications." *Journal of the American Society for Psychical Research*, 1970, Vol. 64, 358-374.

Ullman, M., and Krippner, S. "A Laboratory Approach to the Nocturnal Dimension of Paranormal Experience: Report of a Confirmatory Study Using the REM Monitoring Technique." *Biological Psychiatry,* 1969, Vol. 1, 259-270.

25. Ullman, M., and Krippner, S. "An Experimental Approach to Dreams and Telepathy. II. Report of Three Studies." *American Journal of Psychiatry,* 1970, Vol. 126, 1282-1289.
26. Ullman, M., Krippner, S., and Feldstein, S. "Experimentally-Induced Telepathic Dreams: Two Studies Using EEG-REM Monitoring Techniques." *International Journal of Neuropsychiatry,* 1966, Vol. 2, 420-437.
27. Ullman, M., Krippner, S., and Feldstein, S. "Experimentally-Induced Telepathic Dreams: Two Studies Using EEG-REM Monitoring Techniques." *International Journal of Parapsychology,* 1966, Vol. 8, 577-603.
28. Ullman, M., Krippner, S., and Honorton, C. "A Review of the Maimonides Dream-ESP Experiments, 1964-1969." *Mysterious World: A Journal of Parapsychology* (Israel), May/June, 1970 (No. 16), 36-37.

VIII.

PARAPSYCHOLOGY AND SCIENCE

AN EXPERIMENTALLY TESTABLE MODEL FOR SPONTANEOUS EXTRASENSORY EVENTS

Rex G. Stanford

---

r. Stanford, who is director of the Center for Parapsy-
ogical Research in Austin, Texas, selected this paper as
haps the most representative of my thinking and the
s behind my research in recent years." Prior to establish-
t of the Center in 1976, he was Assistant Professor of
hology at St. John's University in Jamaica, New York;
1968 to 1973 Rex G. Stanford was a Research Associ-
with the Division of Parapsychology, Department of Psy-
try, University of Virginia School of Medicine. At the
in Center, Dr. Stanford concentrates on experimental
psychology. He is the author of some thirty scientific pa-
and has contributed to several books on parapsychology.
paper originally appeared under the title "An Experimen-
Testable Model for Spontaneous Psi Events: I. Extrasen-
Events," in the Journal of the American Society for
hical Research *(Vol. 68, No. 1, January, 1974)*. Copyright
74 by the American Society for Psychical Research, Inc.

Introduction

is paper will discuss how experimental studies are illumi-
g the function of spontaneous ESP.

definition, spontaneous ESP occurs without the con-
s intention of the experiencing person. For this reason,
e experiments to be reviewed in this paper will involve

some element of nonintentional ESP. Nonintentional ESP ca
be described as extrasensory response to material which o
is not deliberately attempting to apprehend by ESP. Suc
nonintentional ESP, e.g., spontaneous ESP (Rhine, 1967
seems to function in the service of personal needs.

The experimental approach to understanding spontaneo
psi is necessary because (a) there are serious difficulties
drawing conclusions from spontaneous cases in any area
research, and (b) the published reports of spontaneous ES
are highly selected and probably are nonrepresentative of t
kinds and amount of ESP which occur spontaneously. ES
may occur in ways or in situations in which it is seldom
ever recognized, and, even if recognized, it may not be r
ported because it is not regarded as highly evidential. Th
even large collections of such cases cannot tell us whether,
to what degree, subtle and possibly unrecognized unconscio
psi plays a role in our life experience.

The question whether ESP may be a formative influence
our lives rather than just a "flash-in-the-pan" is not as fa
fetched as it seems. First, ESP, like all other abilities disco
ered among humans, appears to be general across the speci
(Rhine and Pratt, 1957; Schmeidler and McConnell, 195
and, of course, it may be present in some of the lower speci
(Levy, 1972; Levy and McRae, 1971; Levy, Mayo, Andr
and McRae, 1971; Morris, 1970). If ESP is a general hum
ability and extends downward in the phylogenetic scale, it
fair, following a Darwinian logic, to ask what function
plays in life experience and whether, since most of us do n
recognize having had ESP experiences, the most comm
function of the ability may be an unconscious one—that
one in which extrasensory influence on a person may be u
recognized as such by him. Second, there are odd and seem
ingly meaningful happenings in everyday life which usua
are shrugged off as coincidences but which may sometimes
produced by subtle, nonintentional psi function.

The following are incidents of this kind:

Case 1

This case suggests that unconscious ESP may cause one
forget something or to make a "mistake" which leads
unexpectedly favorable consequences. A correspondent
New York, a retired attorney, recently wrote:

> One Sunday afternoon I was headed for Greenwich Village intending to drop in on my good friends and artists, Mr. and Mrs. P. I took an express subway train to 14th Street, where I would change to a local train to 8th Street. However, upon leaving the express at 14th Street, I "absent-mindedly" walked right out through the gate and halfway up the stairs to the street before remembering that I had intended to take the local train. Not wishing to pay another fare, I decided to go on to the street and walk the additional six blocks south. I had proceeded along Seventh Avenue as far as 12th Street when I met Mr. and Mrs. P. walking northward, on their way to some appointment in the area. I was able to walk with them for a few blocks and receive credit for the call. Obviously I would have missed them had I traveled as planned.

se 2

he same correspondent who supplied the example above
wrote:

> My Congressman in Washington, Congressman K., is a professional acquaintance of long standing. Early last year, while Congress was in session, he sent a printed letter to his constituents listing quite a number of important bills or issues which he would have to vote on or consider, and inviting "yes" or "no" replies and comments. I let this lie on my desk at home for several days, and one evening decided to fill it out with certain comments and take it to my office the following morning to give to my secretary to mail to Congressman K. in Washington with a personal note. In the morning I left for the office a little later than usual and went to one of the two subway stations I use, arriving on the platform less than a minute before an incoming train. While I stood there I felt a hand on my shoulder, and it was Congressman K. I was enabled to visit with him on the train, give him his letter and discuss some of my comments. I had assumed he was in Washington and have never before or since encountered him in that subway station.

This second case suggests that extrasensory influence ma sometimes occur via an unconscious timing mechanism.

Case 3

Another example which may involve unconscious ESP in timing relationship came from a correspondent who work for a company involved in the management of artists. M correspondent wrote that she was trying to locate a particula operatic tenor who was out of town and called his son to fin out where he was. He replied that his father was in fact a that moment calling on the other phone line, and my correspondent was able to relay her message. The same thing happened on a later occasion. My correspondent also noted tha she rarely called the tenor's son.

Case 4

A Charlottesville, Virginia, young married couple who ar strictly vegetarian planned to drive to Wilmington, Delaware to spend Friday night with some friends prior to a lecture th husband had to give in Philadelphia the next day. On th morning of leaving for Wilmington, the couple debate whether to get lunch in their home town or to have it o their trip to Wilmington. They decided to have lunch on thei way. Before leaving they also discussed their intention of trying to find some good vegetarian food in Washington, D.C. on the Sunday following the lecture. They had to go t Washington before returning home in order to attend a meeting there. The husband mentioned to his wife an India restaurant in Washington which he had visited some time before. They decided they would probably go there, thoug with some reluctance since the wife did not like extreme hot food and this restaurant's food seemed particularly ho Also, the restaurant did not give a great choice in the way o vegetarian dishes.

The couple left for Wilmington and stopped in a restaura in Warrenton, Virginia, for lunch. They entered the restaurant and the husband started to select a booth on the righ side, but changed his mind and they moved to the left sid next to a window. Within about fifteen minutes a group o four or five older persons came in and took the booth immediately behind the husband. Almost immediately one memb of this group began to talk of places one could get India d in Washington. (Note: The restaurant in Warrenton was an Indian restaurant, but one associated with a motel.) did not mention the Indian restaurant the husband of our ple had earlier visited (the only one he knew about in shington). He mentioned another Indian restaurant and d that it was a very good restaurant with quite reasonable es. He even described its location. The same person men- ed that he had once visited a restaurant in Washington ch served very good and inexpensive organic vegetarian d, including some Indian dishes. He said the place was by some sect of an Indian religious sort. (He could not ember the name of the sect.) He told his group that the ce was called the "Golden something, but I just can't ember the full name." He, however, gave the location of restaurant, noting that it was very near the Indian aurant he had earlier mentioned.

The husband of our vegetarian couple eavesdropped on the versation and asked no questions of the group behind him ho, incidentally, were nonvegetarian). Yet the man in the up who had done the most talking had freely given out an ntially complete set of information of the kind our couple uld very much have wished to hear. Indeed, the husband narked that he could probably not have received more nplete information about the kinds of restaurants he hed to visit had he asked the man direct questions about m. He remarked on the seeming intrinsic improbability of occurrence since relatively few Americans have eaten in ian restaurants, much less one featuring organic veg- rian food. Then there was the improbability of meeting h a person by "coincidence" in Warrenton, sitting in a th next to him, and his actually discussing exactly what wished to hear—immediately before a trip where one ld make use of such information. The couple subsequently ted both restaurants mentioned and found them much to r liking.

s unconscious psi involved in such incidents? By the ure of spontaneous cases we cannot be sure, but recent ex- mental studies suggest that psi working in the service of individual's needs may explain at least some incidents ilar to these.

lso, psychoanalytic patient-therapist observations (e.g., ereux, 1953; Eisenbud, 1970) suggest a subtle, but rather verful, nonintentional, need-relevant function for ESP.

fter reviewing the experimental evidence for nonintentional need-relevant ESP I will suggest a conceptual mode which subsumes this evidence, provides possible understanding of some of the so-called coincidences of life experience and suggests experimental work which will aid in understanding the possible psychological and biological functioning o ESP in the human organism and in the lower organisms t which the model will equally well apply.

Review of Relevant Experiments

The first group of experiments I wish to review are those i which the ESP test given subjects was an intentional ESP task but in which the experimenter, *unknown to the subjects,* included in the test certain emotionally or motivationally important material and observed its effects upon the subjects performance on the ESP test. Thus there was an opportunity for nonintentional psi to occur.

Carpenter (1971) reported two studies in which subject matched a deck of standard ESP cards against concealed cards of the same kind. Completely unknown to the subjects half of the concealed cards had enclosed with them photographs showing human sexual intercourse; the other half o the concealed cards had enclosed with them blank cards o the same size as the erotic photographs.

In one such study involving sixteen male college student who believed ESP was possible under the conditions of th experiment, subjects were significantly more accurate i matching the erotically loaded targets than in matching thos neutrally loaded.

In an unpublished study also using college males, I confirmed this effect using verbal rather than pictographic eroti stimuli. In my study I included a separate group of colleg girls and could find no effect with them. Carpenter's wor with college students had involved only males. The occu rence of the effect in college males but not in college female strengthens a motivational interpretation of such results. seems the added erotic material made the male subjects mor responsive or attentive to the adjacent standard ESP symbol

In a study otherwise methodologically identical to his wor with college males, Carpenter (1971) tested male and fema junior high school students. His finding with these subjec was an interaction between target loading (erotic versus ne tral) and anxiety of subjects as measured by the Taylo

nifest Anxiety Scale. The interaction consisted largely of
h-anxious subjects consistently miscalling erotically loaded
ets and guessing correctly the neutrally loaded targets.
s interaction lends support to a motivation interpretation
he experiment.

uch studies have an interest far beyond the specific find-
. Although subjects never reported awareness of the
sence of the erotic stimuli, they responded *appropriately* to
m. By appropriate I mean that the effect on the accuracy
their ESP calls seems proper in the light of the motiva-
al content of the added, but unexpected, material and the
rred needs of the subjects. This suggests that a person
y appropriately respond to motivating stimuli of which he
no prior conscious knowledge and that he may do so
hout developing a conscious knowledge of the stimuli to
ich he has responded.

urther work has been reported which supports the mo-
tional interpretation of such studies. Johnson and Nord-
k (1972) adopted an experimental paradigm very similar
Carpenter's. In a matching test of ESP involving a single
ject, half the stimuli, unknown to the subject, were words
ted to very unpleasant or traumatic experiences she had
; the other half, again unknown to her, were words
ted to very pleasant experiences she had had. The two
ds of stimuli were randomly intermixed in the test. In
ching the "unpleasant" stimuli she significantly psi-missed
iably mismatched words); she showed reliable psi-hitting
rrect matching) on the "pleasant" stimuli; and the differ-
e in performance for the two stimulus classes was highly
ificant.

n a related study involving a group of unselected subjects,
nson (1971) again compared ESP performance on emo-
ally loaded targets. Though subjects did not know the
nature of the experiment, they performed significantly
ter on positive-affect targets than on negative-affect targets.

he most important suggestion which comes out of the
dies cited is that persons may use nonintentional ESP to
ect and enable them to respond to motivationally impor-
information with which they not only have no sensory
tact, but which they do not even know exists. Can persons
this nonintentional extrasensory response directly in ful-
ng or subserving personal needs? A number of studies sup-
the hypothesis that nonintentional ESP may serve a
d-fulfilling function.

Let us begin by reviewing some studies in which subjec apparently used nonintentional ESP to respond to the wishe intentions, moods, etc., of the *experimenter*. Some psycholo gists have suggested that many experimental subjects have need to confirm the experimenter's expectations (Rosentha 1966) and are otherwise responsive to many aspects of th experimental situation in addition to those to which they ar asked to respond (Orne, 1962). I would suggest that subjec sometimes use extrasensory as well as sensory cues for thes purposes.

Feather and Brier (1968) reported a series of studie providing evidence that in a precognition test ESP subject were responsive to the person who checked their data agains the targets, the experimenter or an assistant. Subjects, blin as to who was to check their data, tended to confirm the ex perimental hypothesis when the experimenter did the check up, but not when it was done by an assistant. West and Fis (1953) in one study and Fisk and West (1958) in anothe found that subjects fulfilled the experimenters' expectatio that work with ESP targets randomized by West would g poorly and that work with targets randomized by Fisk woul go well. What is interesting is that subjects did not kno which targets were prepared by whom or even that two pe sons were preparing the targets. Osis, Turner, and Carlso (1971) and also Carlson (1970) reported that subjects' ES performance was influenced by the mood of the person wh prepared and laid out the target cards, even though he d not concentrate on the cards and was many miles away fro the experimental subjects.

Some of the studies I shall cite later support the hypothes that there may be nonintentional extrasensory factors in ps chological experiments as well as in parapsychological one

The experiments reviewed above directly and strongly su gest the reality of nonintentional ESP, and they indirect suggest that it may function in the service of personal nee and thus may mediate responses which are instrumental need fulfillment. The best evidence for such a conclusio would, however, come from experiments in which subjec have an opportunity to use nonintentional ESP in a need-fu filling way *but in which they never know their ESP is bei studied and are never instructed to attempt to use their E in any way*. Such experiments would seem to allow fai easy generalization of results to everyday situations in whi sons are not consciously attempting to use ESP. Recently umber of such experiments have been reported.

The first was my experiment on extrasensory effects upon mory (1970). The thirty male, college-student subjects d no idea I was studying their extrasensory functioning. ey listened to a tape recording of what they believed was a am report made by a college girl in a sleep-dream labora- y. They listened to the tape with the intention of making erences about the girl's personality on the basis of her am report. Having heard the dream, they used a card-sort- task to make personality judgments about the dreamer. en they were told that in order to evaluate the efficacy of ir judgments about the girl we needed to know, as a con- l measure, how well they remembered the dream report. ensibly to test their memory of the dream report they re immediately given a four-choice multiple-choice test ering items related to the dream report. Some of the items the multiple-choice test asked about matters which were y clearly and unequivocally stated in the taped dream re- t.

Some weeks after the subjects had participated in the ex- iment, my assistant scored their memory questionnaires. wever, she did not score the questions on the basis of what l actually been stated in the dream report, but rather on a dom basis such that each of the four possible multiple- ice answers (which included the answer given in the taped am report) had a probability of one fourth for its occur- ce. Thus sometimes (approximately one fourth of the e) the randomly chosen "correct" answer accorded with at had been stated on the tape and three fourths of the e it did not. The rationale of randomly choosing a "cor- t" answer was to provide an extrasensory element in the eriment. It was thought that subjects would use nonintenal ESP (in this case, precognition, presumably) to select answer which my assistant would randomly circle as cor- t on their answer sheet. The experiment had been designed make subjects wish to have as many answers as possible cked off as correct.

The outcomes of this experiment supported the proposition t subjects would use nonintentional ESP in accord with s supposed need. I will mention here only two examples of outcomes. Let us consider the items on the memory ques- nnaire for which the taped dream report had given a defi- answer. Subjects were strongly biased to give the answer supplied on the tape. However, the effect of nonintentional ESP was sufficiently strong to overcome this bias in some instances. The following comparison makes the point clearly: On trials in which the random process selected as correct the answer subjects had actually heard on the tape, subjects produced responses contradicting the tape only 1.96 percent o the time; on trials in which the random process selected a correct an answer contradictory to what subjects had heard on the tape, they produced responses contradicting the tape 16.40 percent of the time. The difference of proportions i significant. On the trials in which subjects thus made responses counter to a strong bias engendered by having heard the tape they were accurate 46.90 percent of the time when by mean chance expectation 25.00 percent accuracy is expected a result which is highly significant. Here is evidence of a powerful, but subtle and nonintentional operation of ESP presumably in accord with subjects' motivation to have large number of their answers on the memory test checke off as correct.

Lewis and Schmeidler (1971) have also reported evidenc of nonintentional ESP in a study in which subjects did nc know they were taking an ESP test.

Johnson (1972) has recently reported two ingenious experiments, each of which provided statistically significant ev dence that the subjects, students, used unconscious ES (clairvoyance) to gain knowledge useful in a short-answe essay-type academic examination in one of their actual cour es.

Kreitler and Kreitler (1972) have published a report c three studies which provided evidence that performance c psychological tests was influenced by subjects' nonintention ESP. The tests involved were "subliminal perception" of lette of the alphabet, perception of autokinetic movement, and r sponses to Thematic Apperception Test cards. The results the study are relevant both to the hypothesis of extrasenso mediation of experimenter bias effects and to the more ge eral hypothesis of the nonintentional use of ESP in the ser ice of one's needs. Subjects apparently used ESP to help the discover how to behave in these intrinsically ambiguous open-ended test situations.

Finally, I will mention a recent study of my own (197 closely allied to the Kreitler experiments but done indepe dently and without knowledge of their work. In this stu subjects were given both free- and controlled-associati

d-association tests. Although subjects knew we would at-
pt to influence their associations by ESP and were told
to resist this influence, they were asked to take the tests
as they normally would, without thinking about the ESP
ct. The experiment provided evidence that ESP can influ-
word association even though subjects feel they are in
ay extrasensorially "influenced." The study also provided
first experimental evidence we have about a major way in
h extrasensory influence may find expression in life ex-
ence—that is, through triggering readily available respons-
The study showed that ready responses (i.e., primary
onses of the verbal stimuli) make exceptionally good ve-
es for the expression of extrasensory influence, as con-
ted with responses less readily available.

Conceptualizing Extrasensory Influence in Everyday Life: The Psi-Mediated Instrumental Response (PMIR) Model

indings such as those just reviewed provide a basis for
sidering how psi may function outside the laboratory in
yday situations. The ideas generated from such findings
then be studied in experimental analogues of life situa-
s.

he term "psi-mediated instrumental response model"
IR model) best describes the set of experimentally evalu-
assumptions described below. The reason for this choice
erms will become evident in reading the assumptions of
PMIR model.

he clearest precursors of this model in the parapsycholog-
literature are the writings of Eisenbud concerning psi
ts in life situations. Eisenbud's article entitled "Why
" (1966-67) has been particularly helpful. This should
however, be construed to mean that Eisenbud would
ssarily agree with the model proposed below. It is only to
that the model has benefited by inspiration drawn from
writings.

he assumptions of the PMIR model follow, along with
ussion of each. Some of the assumptions already have
siderable experimental support; some are untested. All re-
e further investigation.

1. *In the presence of a particular need the organism us psi (ESP), as well as sensory means, to scan its environme for objects and events relevant to that need and for inform tion crucially related to such objects or events.*

Support for this proposition comes from all of the stud cited above in which the subjects seemed to respond to nee relevant information about which they were given no senso knowledge. Specifically, the studies which best support t proposition are those in which the subject was given no se sory knowledge even of the existence of the need-relevant i formation but nevertheless seemed to respond appropriate to it. Most of the studies cited above fall into this category. should be noted that in such studies no one was attempting telepathically "transmit" the information in question; thus is parsimonious to assume that the subject played an acti role in his use of ESP. The term "scan" is therefore approp ate as in the assumption above.

In the PMIR model a need-relevant object or event mea any object or event which is need-relevant in any psycholo cally accepted sense of the terms "need" or "motive." Th the model encompasses the entire range of needs, includi tissue needs, instinctual needs, learned needs, and needs su as growth motivation (Maslow, 1962), and effectance m tivation (White, 1959).

2. *When extrasensory information is thus obtained abo need-relevant objects or events (or information crucia related thereto), a disposition toward psi-mediated instrum tal response (PMIR) arises.*

That is, the organism then tends to act in ways which instrumental in satisfying its needs in relation to the nee relevant object or event. (Thus the term "psi-mediated instr mental response," PMIR.)

The studies having the greatest relevance to this propo tion are those in which what would appear to be PMIR ac ally occurred (e.g., Johnson's study of unconscio clairvoyance in academic examinations and my memory-E study).

3. *Preparation for or production of PMIR often invol such changes as motivational or emotional arousal, attentio focusing responses, and other preparation for response.*

This proposition indicates that we can find in the organi other evidences of this nonintentional psi function than si ply the overt instrumental response involved. We should, stance, look for indications of various kinds of arousal, ing cortical, muscular, and even behavioral indices.

Some indirect evidence for this proposition comes from the rk of Carpenter and of Johnson, cited above, in which bjects were taking conscious, forced-choice ESP tests but in ich motivationally relevant material was involved without ir knowledge. Subjects showed evidence of appropriate otional response to such hidden material—even though ey were not producing PMIR as such—in the influence of e material on their hit-miss rates.

This proposition suggests that arousal may be important to e organism in integrating and responding to the incoming trasensory information. Studies of EEG indices predictive success on intentional ESP tasks lend some support to such idea. In three studies success on the ESP task has been asciated with an increase in mean alpha frequency (in Hz) ring the impression-formation (or cue-utilization) period er an immediately preceding period (Stanford, 1971; andford and Lovin, 1970; Stanford and Stevenson, 1972). is suggests some tendency toward cortical arousal during a ccessful impression-formation period. However, such an expolation from intentional ESP tasks to nonintentional ESP ould be done with caution. The best evidence for this propition will come from arousal indices obtained during noninntional ESP tasks.

4. *All else being equal, the strength of the disposition ward PMIR is directly and positively related to: (a) the portance or strength of the need(s) in question; (b) the gree of need-relevance of the need-relevant object or event; d (c) the closeness in time of the potential encounter with e need-relevant object or event.*

This proposition consists of three independent subproposins concerning parameters which are assumed to influence e magnitude of the disposition toward PMIR. The three bpropositions have received no experimental study to date. us their value is primarily in encouraging further research. ch subproposition seems reasonable and nonarbitrary, but ch requires specific testing. The best tests of these proposins would be through direct experimental manipulation of e parameter in question. Such testing would best be done ilizing at least three levels of each parameter. This is because the proposition suggests at the very least a monotonic ation between the levels of each and the disposition toward MIR.

One almost expects the relation of need strength and measured disposition toward PMIR to reverse at very high levels of need strength, especially when the response required is complex (Yerkes-Dodson Law). An organism can be "overdriven," resulting in less than fully effective behavioral response. Whether in laboratory settings this high level of a need could realistically or even ethically be produced is another question.

5. *PMIR can (but need not always) occur: (a) without a conscious effort to use psi; (b) without a conscious effort to fulfill the need subserved by PMIR; (c) without prior sensor knowledge even of the existence of the need-relevant circumstance; (d) without the development of conscious perceptions (e.g., mental images) or ideas concerning the need-relevant circumstance; and (e) without awareness that anything extraordinary is happening.* This means that PMIR can occur under any one of the conditions specified in (*a*) - (*e*) and that it can occur when any number of these conditions are combined (including all of them combined).

Experimental evidence already exists in support of each o the subpropositions above and in support of the combinatio of those subpropositions.

The evidence for (*d*) and (*e*) is indirect, but nonetheles fairly compelling. In the studies cited earlier which are relevant to the PMIR idea subjects have not been explicitly aske whether they developed specific cognitions or perception about the need-relevant circumstance. It seems likely, though that had they done so, they would have mentioned it. Even i my study (cited earlier) in which we attempted to influenc word associations through ESP and subjects were aware o the efforts to influence them, their spontaneous utterance were always to the effect that they were skeptical that any influence of that kind had occurred.

Subproposition (*c*) has perhaps received the greates amount of experimental validation. Most of the studies cite earlier provide evidence which accords with this propositio

Subproposition (*a*) has considerable experimental suppor though not so much as (*c*). Johnson's study of clairvoyanc in academic examinations very likely supports this propositio (unless we assume that the students made a conscious effor to use ESP to supplement their "book knowledge," which doubtful). The Kreitler work on extrasensory influences upo psychological tests is certainly supportive, as are the Lewis Schmeidler study and my own study of extrasensory effect

on memory. Others of the studies seem to provide some
irect support.

ubproposition (*b*) has had the least direct testing of sub-
positions (*a*) - (*c*). The only evidence to date directly
porting this proposition was recently obtained in an ex-
ment (Stanford and Thompson, 1973) designed to study
IR under conditions which would optimize the chances of
eting all the criteria specified in subpropositions (*a*) - (*e*).
study confirmed subproposition (*b*) and was supportive
all the other subpropositions. There is certainly a need for
re work to directly test subproposition (*b*) and the propo-
on than PMIR occurs with any combination of the criteria
cified in subpropositions (*a*) - (*e*).

. PMIR occurs in part through psi-mediated facilitation
triggering of otherwise ready or available responses (in-
ding actual behaviors, thoughts, memories, or feelings).

The implications of this proposition are best understood in
ation to the proposition which follows.

. PMIR tends to be accomplished in the most economical
y possible.

Basically, PMIR is conceived to function as simply and
nomically as possible through psi interactions with condi-
ns or processes already existing in the organism. As sug-
ted in proposition (6), psi has the capacity to prime
ious kinds of responses which are already within the reper-
y of the organism. The ways this could function in prac-
should become clear when specific mechanisms for PMIR
discussed below. It bears mention here that while PMIR
onceived, basically, to occur through psi-mediated facilita-
or triggering of responses in the organism's normal rep-
ory, PMIR is conceived also to occur through psi-mediated
ibition or blocking of responses which necessarily have to
blocked in order for PMIR to occur. This does not contra-
t proposition (6) since this response-blocking or inhibition
onceived to occur via psi-mediated facilitation of respon-
which compete with (or, ultimately, replace) those re-
nses which would have to be eliminated or slowed in
er for PMIR to occur. This response competition mecha-
m for inhibition or blocking of responses should in princi-
be quite effective. Experimental evidence exists that psi
function quite effectively when there is the possibility of
doing so through triggering readily available responses
anford, 1973). These psi-released readily available respons-
could then strongly compete with the response which

would have to be suppressed in order for PMIR to occu There is also experimental evidence that psi can prime r mote or relatively improbable responses such that they ca seemingly override responses which would ordinarily hav been prepotent (Stanford, 1970, 1973).

The combination of propositions (6) and (7) sugges several mechanisms through which PMIR may, in practic manifest itself. The following mechanisms are not necessaril mutually exclusive and indeed are in some senses closel related.

(a) Unconscious Timing Mechanism—This allows or unexpectedly to be at the appropriate place at the appropria time to encounter a favorable event or to avoid an unfavo able one; or causes one to perform a preplanned action (action sequence) at a time when the act has definite, logical unforeseen, favorable consequences. This mechanism mig function by interposing, in an action sequence, ready behav iors which are simply released or triggered through p guidance; by a similar suppression of particular actions; b affecting the rate of performance of an action sequence; by influencing directly the time of initiation of a preplanne action sequence. Possible examples of this kind are given Cases 2 and 3 early in this paper. A recent experiment h provided evidence that PMIR can function via an uncon scious timing mechanism (Stanford and Thompson, 1973).

Which of the above ways is selected to accomplish th unconscious timing effect should be determined by which po sibility provides the easiest, most economical way of achie ing the end result.

(b) Forgetting or Remembering—Forgetting or remembe ing something in a situation in which this forgetting remembering has logically unpredictable favorable cons quences. A possible example of the forgetting mechanism Case 1 described above. The memory-ESP study cited earli provides some support for this proposed mechanism (Sta ford, 1970). A hypothetical example of the rememberi mechanism would be remembering that it was last year whe you last checked the inflation of your car tires, stopping by gas station long enough to do this, and thereby avoidi being on a bridge up ahead which in the meantime has u dergone a disastrous collapse. The word-association-ES study (Stanford, 1973) provides some reinforcement for th idea of a remembering mechanism.

(c) Mistakes—Possibly by nonintentional extrasensory i

nce mistakes sometimes occur which work to an unex-
ted advantage. In my file of possible PMIR cases is one in
ch a fifteen-year-old girl misdialed in telephoning a friend
reached an elderly woman having a heart attack. The
nan was barely able to get the phone, but did so, crying
for help and collapsing on the floor. The girl had the op-
or trace the call and thus was able to send help. This
ningly saved the woman's life.

d) *Associations*—A thought comes to mind which leads
he initiation of action which has unexpectedly favorable
sequences. A hypothetical example: The thought of a
nd comes to mind and causes you to call him and thus to
n from him some unanticipated news of special impor-
ce to you.

his proposed mechanism is closely related to the remem-
ng mechanism discussed above. Indeed, it is simply a
ety of that mechanism which is not concerned with spe-
memories of past events, but with potentiating into con-
usness particular ideas. Like the remembering mechanism,
associations mechanism has received experimental support
n the study of word-association and ESP (Stanford,
3). That study provided evidence that psi can prime both
icular responses and particular meanings (ideas) in an as-
ative context.

e) *Conscious Psi-Mediated Cognitions and/or Percep-*
s—As in typical spontaneous case reports, PMIR can be
liated by psi-produced ideas and/or apparent perceptions
need-relevant circumstances. This particular PMIR mode
been overemphasized historically and this has led to a
ewhat misleading term, extrasensory perception, being
l to designate the entirety of extrasensory function.
eed, even as applied to many cognitive and/or "percep-
" cases of ESP, the term "perception" may be a misno-
. Roll (1966) has cogently argued that many veridical
mediated "images" and "impressions" are really based
n psi-selection and psi-elicited recall of specific memories
n out of the psychic's sensory past which will represent to
psychic's consciousness the essential nature of the event
g cognized or "perceived" by psi. Further, the strong
e of conviction often associated with such cases likely
ves not from the intrinsic nature of such events but from
fact that the ideas, images, feelings, etc., which are psi-
iated into consciousness in such instances are so unusual
nappropriate in the life-context in which they appear that

the person experiencing them is inclined to impute to the
an unusual or psychic origin (Stanford, 1967).

Proposition (7) suggests, among other things, that a fu
blown, conscious (psi-mediated) cognition or perception (
the waking state) of the need-relevant object or event is u
likely when PMIR can be accomplished in some simpler, le
disruptive way.

There may be certain classes of events in which a psi-me
ated cognition or perception of the need-relevant event wou
be necessary for the occurrence of PMIR. This is not th
place to speculate about what classes of events fall into th
category, but one particular kind of event seems so obvious
in this category that it is worth discussing here.

This is the occurrence of a tragic event in one's own life
in the life of someone very near to oneself. After such an o
currence there often follows a sense of great loss, and
helplessness and despair.

However, an individual can perhaps escape some of th
unpleasantness of such an experience if he has some forewar
ing and thus can prepare for the event both psychologica
and concretely. Thus, if he can obtain cognitive (intuitive)
perceptual (e.g., veridical dream) knowledge via precognitio
that the tragic event is about to occur, he can be bett
prepared psychologically (and perhaps practically) to co
with the event and thus can at least reduce the magnitude
some of the negative affect associated with the actual expe
ence. At the very least this extrasensory foreknowledge c
provide a kind of immunizing inoculation which reduces th
stress of the event when it actually occurs.

In this form of PMIR the *instrumental response* involved
the psychological adjustment or other preparation the percip
ent makes in the light of his forewarning of the tragic even
In such a case the instrumental response is mediated by
cognitive or perceptual form of ESP, the forms of ESP whic
would seem most efficacious in such an instance. This m
account for the fact that many cognitive or perceptual e
pressions of ESP refer to tragic events.

8. *Certain factors limit the possibility for or the effe
tiveness of PMIR. Many such factors are situational. Othe
are psychological and include behavioral rigidity, inhibitio
stereotypy, response chaining, and strong preoccupatio
blocking the expression of PMIR.*

The situational factors require little discussion. It is not di
ficult to imagine that many situations permit little in the wa

effective PMIR function. Suppose, for instance, that there
n epidemic of bubonic plague. If only one out of twenty
ons is actively carrying the disease and thus can expose
to it, PMIR might be effective in helping one avoid con-
ting the disease; but as a higher and higher proportion of
population becomes exposed to the disease or actually has
he potential effectiveness of PMIR in this connection is
uced.

The psychological limiting factors are of more interest. The
n "behavioral rigidity" refers to preplanning a block of
's time such that it becomes a rigid schedule or regimen
n which little or no deviation is permitted. "Behavioral in-
ition" refers to a general tendency toward the imposition
tight rational or stylistic constraints upon behavior such
one must be quite sure of what one is doing or how one
oing it before one takes any action, particularly if the ac-
is somehow unusual, unexpected, or deviant in terms of
's usual style of action. A person who exhibits high behav-
l inhibition seldom acts on impulse. He must have a high
el of justification for all that he does and must feel sure
action is appropriate to what he knows of or how he typi-
y responds to the circumstances at hand. "Behavioral stere-
py" refers to a tendency to repeat a specific action, or a
cific action sequence in exactly the same way it has been
e before. "Response chaining" occurs when a given act
ds strongly and automatically to follow another particular
Response chaining does not always derive from rational
nning or scheduling.

he factors just delineated would logically seem to limit
possibilities for the occurrence of PMIR. All of them in
ence put predetermined constraints on behavior. A number
experimental studies confirm that factors such as these do
ibit the expression of ESP (Nicol and Humphrey, 1955;
nford, 1964, 1965, 1966a, 1966b, 1968, 1973).

ention of these behavioral constraints on PMIR serves to
phasize the importance of a particular proposed mecha-
n for the occurrence of PMIR: the unconscious timing
chanism. Theoretically this mechanism, though not entirely
une to the effects of these behavioral constraints, should
d the best chance of functioning in the face of them. The
onscious timing mechanism can often accomplish its
IR function without serious interference from these con-
ints because it can frequently work within such con-
ints. This should be apparent if the reader will review the

earlier discussion of the unconscious timing mechanism an consider it in the light of the constraints just discussed.

If it can be assumed that children are more free of the behavioral constraints on PMIR than adults, then it would follow that they should exhibit more PMIR than the latter. An if PMIR is actually a formative factor in our total life experience, it could then be imagined that it might play its largest though certainly not its only, role in childhood and adolescence.

As noted in assumption (8) strong preoccupations ca block the expression of PMIR. If the organism is strongl and rather continually preoccupied with something at a give time, even though psi-scanning may reveal the presence of need-relevant object or event in the environment, it may b difficult for the PMIR mechanisms to pull the organism awa from its preoccupation or to function within that preoccupation. The relative importance of the organism's preoccupatio and the information obtained through psi-scanning may determine the magnitude of the psi-mediated disposition to pu the organism away from its preoccupation.

9. *Certain factors dispose toward systematic misuse PMIR, i.e., use of PMIR in ways which would normally b regarded as against the organism's own best interests. Facto disposing toward this misuse of PMIR are considered to i clude neuroticism, a negative self-concept, and direct motiv tional conflicts such as guilt or an approach-avoidan conflict. In the case of guilt or an approach-avoidanc conflict, whether PMIR is used to approach or to avoid t goal (need-relevant object or event) should depend upon t same factors which govern behavior in ordinary approac avoidance situations.*

There have been no direct experimental tests of the ide involved in this proposition; that is, no studies of noninte tional ESP have been attempted to test these ideas. There ar however, some studies of intentional ESP performance whi bear on these assumptions of the PMIR model. These studi however, would have more relevance if it could be show that ability to perform successfully on an intentional E task is at least to some degree the same ability which is i volved in the constructive use of nonintentional E (PMIR). A first step has been made in demonstrating this. a recent study performance on a nonintentional PMIR t correlated positively and significantly ($r = +.39$) with p formance on an intentional ESP task (Stanford and Thom

1973). Interestingly, this correlation between the two
es of ESP task is roughly of the magnitude found for what
essentially a split-half reliability in an ESP task (Stan-
, 1973). This suggests there is considerable comparability
veen the function of nonintentional and intentional ESP.

hus in considering the psychological factors which influ-
intentional ESP performance we have at least some ex-
mental basis for suggesting that the same factors may be
ted to the way persons use PMIR.

ince we can at least make a tentative argument that there
be some comparability between intentional and nonin-
ional ESP scores, let us consider whether there is evidence
n intentional ESP tasks which accords with proposition

he studies attempting to relate neuroticism to intentional
scores give somewhat inconsistent results (see summary in
thamani and Rao, 1973). It is worth noting, though,
in the most extensive block of work on this problem, the
experiments reported by Kanthamani and Rao (1973),
h-neurotic" subjects performed more poorly than "low-
rotic" subjects quite consistently. In each of the four ex-
ments the difference was statistically significant. The
thamani-Rao work was done with children. This is of in-
st because the PMIR model suggests that children may in
eral show less of the behavioral constraints which act on
and thus may more dramatically manifest the effects
n ESP (or PMIR) of factors such as neuroticism.

Vhile some studies have failed to show the anticipated sig-
cant negative relationship between neuroticism (and other
cations of maladjustment) and ESP performance, in gen-
the results of experimental studies point in this direction.
re have been few significant reversals. Mangan's review
58) of the personality-ESP literature concludes that both
chological adjustment and security militate in favor of
cess on intentional ESP tasks. It was partly on the basis of
n findings that the assumptions about psychological adjust-
nt and PMIR were incorporated into the PMIR model.
wever, these assumptions about personality and PMIR
uld be regarded as extremely tentative and in need of
h refinement through research and subsequent reconcep-
lization.

he assertion in assumption (9) that the misuse of PMIR
avored by a negative self-concept derives from the idea
persons with a strongly negative self-concept may in a

sense use PMIR to validate that self-concept. Such a sel concept may involve feelings of being useless, helpless, sinfu wicked, etc. Persons with a highly negative self-concept ma also misuse PMIR for the purpose of punishing themselve This idea has had no real experimental study, either with r spect to intentional or nonintentional ESP, but it may hav some indirect confirmation in the finding mentioned immed ately above that psychological security seems positively r lated to performance on intentional ESP tasks.

As concerns the assumption about guilt and motivation conflicts and PMIR, there are suggestive results involvin quasi-nonintentional ESP tasks. The work by Carpent (1971), Johnson (1971), and Johnson and Nordbeck (1972 with emotionally loaded targets can be construed as suppor ing the proposition just mentioned. Subjects tended to ps miss in attempting to match targets when, unknown to then the targets had associated with them what might be construe as a negative emotional loading. In Carpenter's study wit junior high school students, high-anxious subjects tended psi-miss when trying to match targets associated with a erotic loading, even though they did not know any targe had special loadings. In Johnson's two studies subjects tende to psi-miss in trying to match targets which, unknown them, had a negative emotional loading. In summary, in a three studies subjects were consciously trying to correct match the targets, but when, unknown to them, the targ was loaded with aversive material, they tended to psi-miss.

Such results at least accord with the hypothesis in questio though they neither confirm nor disconfirm its full implic tions. It would have to be tested with a completely noninte tional ESP task, i.e., a PMIR task, and subjects would hav to demonstrate something like a tendency to use PMIR avoid some normally desirable object or event about whic they could be predicted to show some guilt or approac avoidance conflict. And subjects not thus conflicted should able to use PMIR to help them approach this normally desi able obejctive.

Proposition (9) also asserts that subjects using PMIR in a approach-avoidance situation should manifest typical beha ior for such a situation. In ordinary approach-avoidance sit ations the organism makes approach responses until it gains certain perceived proximity to the goal and then it becom more and more inhibited as it further approaches the go and, ultimately, may move away from the goal. Too close

roach to the goal causes the organism to reach a point at
ch the aversive aspects of the situation exceed the positive
ects. Psychologists typically conceptualize this by saying
the approach gradient is less steep than the avoidance
dient and thus at a considerable distance from the goal
e is a greater tendency to approach than to avoid, but the
rence of the tendencies becomes less and less until the
idance tendency actually exceeds the approach tendency
ewhere relatively near the goal. An example is the little
who sees a dog, approaches it smiling, but as he gets
rer becomes afraid, slows down and ultimately stops and
moves away, apparently out of fear of being bitten. He
even cry, but the crying would be more the result of ex-
encing and giving in to the conflict than out of fear of
g bitten.

pplied to the PMIR situation, this would mean, for exam-
that a man with high sex guilt who nonetheless has a
ng sex drive might constructively use PMIR to allow him
atch a glimpse of the prettiest girl in his section of town,
e at the same time he might "misuse" PMIR in order
tively avoid having any really close contact with such an
ctive (and thus threatening) person.

here are a number of ways in which this kind of predic-
from assumption (9) could be studied experimentally,
this is not the place to describe such experimental de-
. No such experiments have been done to date.

Synopsis and Comments

he PMIR model is intended to subsume recent laboratory
ngs on nonintentional, need-relevant ESP and to suggest
rimentally testable propositions about how these findings
e to life experience. The model proposes means by which
R could occur without being highly disruptive and with-
causing the individual using it to feel that anything un-
is happening. One conceptually important prediction
the model is that PMIR can occur even in a highly pre-
ammed behavioral sequence—via the unconscious tim-
echanism.

early such a model implies some radical ideas about per-
ity and its relation to life experience. Among other
s, it suggests that at least some of the seemingly mean-
l events in life which we usually dismiss as "sheer coin-

cidence" may be psi-mediated and actively produced by organism in accord with its needs and typical modes adaptation. The model can and should be extended to enco pass psychokinesis and the conjoint, nonintentional use ESP and PK as PMIR.

The PMIR model gives serious consideration to the resp sibility the parapsychologist has of proposing and test ideas about the functional significance of psi abilities. Perha this model and its related evidence will encourage parap chologists and other scientists to consider more seriously possible psychological and biological implications of the pl nomena we have called "paranormal" and have often regard as rare, bizarre, and even freakish. These phenomena may much more frequent and integral in the scheme of things th we have imagined. In any event, we can be assured that inv tigations now under way will help us to find out.

REFERENCES

1. Carlson, M. L. "Subject and 'Experimenter' Moods a Scoring on a Correspondence ESP Test." *Journal* *Parapsychology*, Vol. 34, 1970, 273-274. (Abstract)
2. Carpenter, J. C. "The Differential Effect and Hidd Target Differences Consisting of Erotic and Neutral Sti uli." *Journal of the American Society for Psychi* *Research*, Vol. 65, 1971, 204-214.
3. Devereux, G., (ed.) *Psychoanalysis and the Occult*. N York: International Universities Press, 1953.
4. Eisenbud, J. "Why Psi?" *The Psychoanalytic Revie* Winter, 1966-67, 147-163.
5. Eisenbud, J. *Psi and Psychoanalysis*. New York: Gru & Stratton, 1970.
6. Feather, S. R., and Brier, R. "The Possible Effect of t Checker in Precognition Tests." *Journal of Parapsych ogy*, Vol. 22, 1968, 167-175.
7. Fisk, G. W., and West, D. J. "Dice-Casting Experime with a Single Subject." *Journal of the Society for Psyc cal Research*, Vol. 39, 1958, 277-287.
8. Johnson, M. "An Attempt to Affect Scoring Behavior in Group Test of Precognition by Means of Manipulati of Motivation and by the Use of Individually Assign Emotionally Loaded Targets." *Research Letter* of t Parapsychological Division of the Psychological Labo

tory, University of Utrecht, December, 1971; Utrecht, The Netherlands.

Johnson, M. "A Written Academic Exam as a Disguised Test of Clairvoyance." Paper presented at the Fifteenth Annual Convention of the Parapsychological Association, Edinburgh, Scotland, September, 1972.

Johnson, M., and Nordbeck, B. "Variation in the Scoring Behavior of a 'Psychic' Subject. *Journal of Parapsychology*, Vol. 36, 1972, 122-132.

Kanthamani, B. K., and Rao, K. R. "Personality Characteristics of ESP Subjects: IV. Neuroticism and ESP." *Journal of Parapsychology*, Vol. 37, 1973, 37-50.

Kreitler, H., and Kreitler, S. "Does Extrasensory Perception Affect Psychological Experiments?" *Journal of Parapsychology*, Vol. 36, 1972, 1-45.

Levy, W. J., Jr. "The Effect of the Test Situation on Precognition in Mice and Birds: A Confirmation Study." *Journal of Parapsychology*, Vol. 36, 1972, 46-55.

Levy, W. J., Jr., Mayo, L. A., Jr., André, E., and McRae, A. "Repetition of the French Precognition Experiments with Mice." *Journal of Parapsychology*, Vol. 35, 1971, 1-17.

Levy, W. J., Jr., and McRae, A. "Precognition in Mice and Birds." *Journal of Parapsychology*, Vol. 35, 1971, 120-131.

Lewis, L., and Schmeidler, G. R. "Alpha Relations with Nonintentional and Purposeful ESP after Feedback." *Journal of the American Society for Psychical Research*, Vol. 65, 1971, 455-467.

Mangan, G. L. *A Review of Published Research on the Relationship of Some Personality Variables to ESP Scoring Level.* (Parapsychological Monographs No. 1.) New York: Parapsychology Foundation, 1958.

Maslow, A. H. *Toward a Psychology of Being*. Princeton: D. Van Nostrand, 1962.

Morris, R. L. "Psi and Animal Behavior: A Survey." *Journal of the American Society for Psychical Research*, Vol. 64, 1970, 242-260.

Nicol, J. F., and Humphrey, B. M. "The Repeatability Problem in ESP-Personality Research." *Journal of the American Society for Psychical Research*, Vol. 49, 1955, 125-156.

Orne, M. T. "On the Social Psychology of the Psychological Experiment: With Particular Reference to Demand

Characteristics and Their Implications." *American Psy chologist*, Vol. 17, 1962, 776-783.

22. Osis, K., Turner, M. E., Jr., and Carlson, M. L. "ES over Distance: Research on the ESP Channel." *Journ of the American Society for Psychical Research*, Vol. 6 1971, 254-288.
23. Rhine, J. B., and Pratt, J. G. *Parapsychology: Fronti Science of the Mind*. Springfield, Illinois: Charles Thomas, 1957.
24. Rhine, L. E. *ESP in Life and Lab*. New York: Macmi lan, 1967.
25. Roll, W. G. "ESP and Memory." *International Journal Neuropsychiatry*, Vol. 2, 1966, 505-521.
26. Rosenthal, R. *Experimenter Effects in Behavior Research*. New York: Appleton-Century-Crofts, 1966.
27. Schmeidler, G. R., and McConnell, R. A. *ESP and Pe sonality Patterns*. New Haven: Yale University Pres 1958.
28. Stanford, R. G. "Attitude and Personality Variables ESP Scoring." *Journal of Parapsychology*, Vol. 28, 196 166-175.
29. Stanford, R. G. "A Further Study of High-Versus Lo Scoring Sheep." *Journal of Parapsychology*, Vol. 2 1965, 141-158.
30. Stanford, R. G. "The Effect of Restriction of Calli upon Run-Score Variance." *Journal of Parapsycholog* Vol. 30, 1966, 160-172. (a)
31. Stanford, R. G. "A Study of the Cause of Low Ru Score Variance." *Journal of Parapsychology*, Vol. 1966, 236-242. (b)
32. Stanford, R. G. "Response Bias and the Correctness ESP Test Responses." *Journal of Parapsychology*, Vol. 1967, 280-289.
33. Stanford, R. G. "An Effect of Restricted Spontaneity ESP Run Scores." In J. B. Rhine and R. Brier, ed *Parapsychology Today*. New York: Citadel, 1968, 1 113.
34. Stanford, R. G. "Extrasensory Effects upon 'Memory. *Journal of the American Society for Psychical Resear* Vol. 64, 1970, 161-186.
35. Stanford, R. G. "EEG Alpha Activity and ESP Perfor ance: A Replicative Study." *Journal of the American ciety for Psychical Research*, Vol. 65, 1971, 144-154.
36. Stanford, R. G. "Extrasensory Effects upon Associat

Processes in a Directed Free-Response Task." *Journal of the American Society for Psychical Research,* Vol. 67, 1973, 147-190.

Stanford, R. G., and Lovin, C. "EEG Alpha Activity and ESP Performance." *Journal of the American Society for Psychical Research,* Vol. 64, 1970, 375-384.

Stanford, R. G., and Stevenson, I. "EEG Correlates of Free-Response GESP in an Individual Subject." *Journal of the American Society for Psychical Research,* Vol. 66, 1972, 357-368.

Stanford, R. G., and Thompson, G. "Unconscious Psi-Mediated Instrumental Response and Its Relation to Conscious ESP Performance." Paper presented at the Sixteenth Annual Convention of the Parapsychological Association, Charlottesville, Virginia, September, 1973.

West, D. J., and Fisk, G. W. "A Dual ESP Experiment with Clock Cards." *Journal of the Society for Psychical Research,* Vol. 37, 1953, 185-197.

White, R. W. "Motivation Reconsidered: The Concept of Competence." *Psychological Review.* Vol. 66, 1959, 297-333.

PARAPSYCHOLOGY IN THE SOVIET UNION

W. P. Zinchenko, A. N. Leontiev,
B. M. Lomov, and A. R. Luria

A revival of parapsychological studies in the Soviet Unio began in the 1960s, largely on the initiative of Professo Leonid L. Vasiliev (1891–1966), head of the Department o Physiology, University of Leningrad. The decade was one o discussion and ferment in the field, characterized by a goo deal of free-wheeling experimentation in such areas as “ski reading” (“dermo-optic perception”), seemingly startling psy chokinetic phenomena, and “Kirlian photography” of emana tions from plants and people.

The new direction of Soviet studies in parapsycholog toward a more tightly controlled and directed pattern wa outlined in the following article, which originally appeare under the title, “Parapsychology: Fiction or Reality?” in th Moscow journal, Questions of Philosophy *(No. 9, Septem ber, 1973). The authors, noted psychologists, argued tha parapsychology needed to be taken out of the hands of sel styled “specialists,” whom they obviously regarded as nor scientific amateurs. Future research, they stated, had to b undertaken by professionals, so that the “attention of seriou scientific organizations” could be directed toward “unar swered questions of the human psyche.”*

The question stated in the original title of this articl [“Parapsychology: Fiction or Reality?”] has been discusse for many decades in the scientific and popular literature the entire world. Lengthy periods of silence have alternate with a flood of reports on some paranormal phenomena. Th authors of this article do not count themselves among th many specialists in parapsychology. We were compelled ite it by the increasing numbers of publications (mostly in ular science publications), here and abroad, concerning observations and investigations of subjects possessing anormal abilities. It should be mentioned that an over- elming number of these publications are by journalists only in a few isolated cases by professional scientists, ng them psychologists and physiologists. These publica- s are frequently of a promotional nature and do not t generally accepted requirements of accurate scientific estigations, but nevertheless were received sympathetically scientists in different disciplines. We are not even speak- of the common mass reader. A good indication, relevant this, are the results of a survey conducted in 1972 by tors of the English journal *New Scientist,* and published following January. About 70 percent of 1,500 scientists answered the questionnaire (a total of 72,000 question- es were sent out) considered paranormal phenomena ei- r as a firmly established fact (25 percent) or as entirely sible (42 percent).[1]

imilar data, which would characterize the attitude of So- scientists to this problem, are not available to us, but the erous irresponsible publications are a cause for justifiable m. It therefore seems to us that it is time to express the ude of the Association of Psychologists of the USSR ard parapsychology, whose status was considered at one he meetings of the Association's Presidium.

The Area of Parapsychological Investigations

n the *Encyclopedia of Philosophy*, parapsychology is de- d as the area of investigation studying, primarily: (1) ns of sensitivity offering means of receiving information ch cannot be explained by the actions of known sense or- s; (2) corresponding forms of influence of a living being physical phenomena, taking place outside the organism, out the intermediate aid of muscles (by desire, thought ction, etc).

he majority of contemporary parapsychologists recognize ollowing kinds of sensitivities:

elepathy: Mutual thought communication between in- or and recipient. Through it, two people exchange infor- on without the participation of sense organs. Basically, athy is sensing the state of another live organism.

Clairvoyance: This also is an extra- or supersensory pe ception of certain occurrences, events, objects; the commur cation of information without participation of known sen organs.

Precognition (Proscopy): A special case of clairvoyanc the prediction of events based on information received fro the future and which cannot be arrived at by reasoning.

Dowsing (also called biophysical effect): Based on tl claim that some individuals are supposed to be able to di cover accumulations of subterranean water, ore, caves, ar certain other objects with the aid of an antenna (bent wire twig, etc.).

Paradiagnosis: Establishment of medical diagnosis base on clairvoyance, without patient contact.

The forms of sensitivity listed above are frequently grou ed together under the term "extrasensory perception" (ESP

There are separate classifications of forms of influenci physical events.

Psychokinesis: Mental influence of man on surroundi objects, for example, on the normal electric activity growth; on spatial position of different objects (not t heavy, as a rule).

Mental Photography: A special case of psychokinesis; consists of a man's ability, by looking into the lens of camera, to imprint on the film the image of an object whi he visualizes (but which in reality is absent).

Paramedicine: An area close to parapsychology, which cludes various unexplained methods of treatment: laying-o of-hands, mental induction (without use of speech and wit out direct contact, at times at great distance), and others.

All the occurrences listed above are united by the te "parapsychology." Other terms used are: "psychotronic "bio-information," "bio-introscopy," etc. In the past, hypno events were mistakenly included in parapsychology. present, hypnosis is used in parapsychology as one means induce certain paranormal events. Teaching of Yoga is al mistakenly included here. Sometimes even astrology.

As is evident from the above statements, various areas a combined into one, because of the mystery and puzzleme caused by the occurrences studied. However, it is wrong principle to consider such a basis sufficient for grouping the occurrences into a separate field of scientific investigation.

Brief Historical Review and Status of Parapsychology Abroad

Ve shall not review in this article the paranormal abilities
ascribed to shamans, sorcerers, lamas, yogis, etc. Para-
chology, as a method of systematic experimental observa-
and investigation, appeared in European culture in
2 when the first parapsychological association was or-
ized in London (and still exists today). It is called the So-
y for Psychical Research. Since then, numerous similar
anizations have been formed and dissolved in many coun-
s. At present there exist a few dozen similar associations,
most cases nonprofessional and with small memberships.
a rule, these groups maintain small laboratories supported
members or by special funds. Many of these organizations
affiliates of the International Parapsychological Associa-
. Parapsychological research is carried out on a small
e at a number of universities (usually private) in the
ted States and in other centers of scientific research. Ac-
ding to unofficial sources, the expenditures of the U.S.
eral government on parapsychological research amount to
a million dollars annually. Some large corporations also
vide financial support for these investigations. One exam-
of the new organizations is the recently formed corpora-
of Edgar Mitchell, the U.S. astronaut who conducted
r experiments in telepathic communication during his trip
he Moon (no significant results were obtained). The task
his corporation is the development of human abilities and
estigations in the area of paramedicine and psychokinesis.
chell hopes to make his corporation self-supporting.
ong consultants of the corporation are the well-known
rnher von Braun and a few scientists from relatively well-
arded research centers. In the United States there also ex-
the Academy of Parapsychology and Medicine (Cali-
nia).

ccording to a count made by parapsychologists, there are
240 laboratories and associations in thirty countries.
s estimate is obviously somewhat high. The majority of
e organizations is in the United States. In 1969, the
erican Association for the Advancement of Science, which
udes different scientific societies, accepted the Parapsy-
logical Association as its member.

From time to time, separate, and, as a rule, limited, scientific research projects of parapsychological interest are carried out at commercial corporations in the United States. Computer technology is utilized in carrying out investigations in these labs. Their research is directed toward establishing the existence of ESP.

Publications Abroad

Parapsychological findings are, as a rule, published in specialized journals appearing in a number of countries. In the United States, their number exceeds ten; in England, five; in Italy, six; in France, two. Some of them include both parapsychology and astrology. There are also journals in other European countries and Japan. In addition, different scientific publishing houses publish a large number of monographs, summaries of conferences and symposia.

Articles on parapsychology, particularly when sensational in nature, were highlighted in such publications as *Life*, *Look*, *Stern* [Germany], and sometimes even in such well-established scientific journals as *Science*, *Nature*, and others.

Scientific journals in the fields of psychology, physiology and other sciences do not, as a rule, publish reports of parapsychological investigations. Between 1960 and 1970, in all scientific psychology journals of the world, there were published, all in all, thirteen parapsychological research reports. Of these, eight cases reported positive results; in others the existence of paranormal events was not confirmed. It is interesting that, during the same period, parapsychologica journals of the world published 143 experimental observations with positive and 19 with negative results. Reviews, criticisms, and accounts of uncontrolled investigations are no included in the above totals.[2] Numerous textbooks and teaching aids for conducting parapsychological research wer published. The last textbook, by R. Ashby, came out in 1972.[3]

The International Association of Scientific Psychology doe not allow presentation of papers or lectures on parapsychological research at its congresses. This is included in its bylaws Apparently by chance, an exception was made only at th Twentieth International Psychological Congress (Tokyo 1972), where a lecture by the American parapsychologist S Krippner was heard.

While on the topic of publications, one must mention some
f the political speculations on parapsychology. We have in
ind, first of all, the book by S. Ostrander and L. Schroeder
ychic Discoveries Behind the Iron Curtain. The book was
ritten in 1968 as a result of the authors' visit to the USSR,
RB [Bulgaria], and ChSSR [Czechoslovakia]. The authors
onscientists) have written a low-level text of the promo-
onal variety. In it, parapsychology serves as an advertise-
ent for anti-Sovietism, and vice-versa. These methods
oved commercially successful, and in less than a year the
ok went through five printings. The book, written on a very
w professional level, overflows with factual errors, mistakes,
d undisguised anti-Soviet thrusts. The book excessively ex-
gerates the "accomplishments" of our parapsychologists.
ne encounters similar exaggerations quite frequently in the
est, particularly in parapsychological and popular publica-
ns (more often, without the open anti-Soviet accompa-
ment). One sees speculations frequently on the following
bjects: parapsychology and defense, psychological warfare,
pionage, etc. All this simultaneously serves to drum up ad-
tional funds for parapsychological research. In general, such
oks are rare in parapsychological literature.

Parapsychology in the USSR

In the early 1920's Professor L. L. Vasiliev conducted
earch on telepathy and clairvoyance, at first with the par-
ipation of Academician V. M. Bekhterev, whose student he
s at that time in Leningrad.[4] Similar research was conduct-
by B. B. Kazhynsky in the Ukraine. Results of these in-
stigations were published by the authors in three mono-
aphs which appeared in 1959 and 1962.

There is no organization uniting parapsychologists in the
viet Union. Enthusiastic students of these or similar phe-
mena occasionally form sections within other technic-scien-
c organizations. A section of bio-information was
ablished in 1965 by staff members of the A. S. Popov
chnic-Scientific Society of Radiotechnology and Electro-
mmunication in Moscow. The group's main area of investi-
ion is telepathy.

In 1967 there was organized a Pan-Union Section of Tech-
al Parapsychology and Bio-Introscopy at the Central Ad-
istration of the Science-Technology Society of the

Instrument Manufacturing Industry. Within the framework o this society two science-technology seminars were conducte in 1968 and 1971 on biophysical effects (twig conductivity) In 1971 the Interscience Commission for the Coordination o Projects on the Problem of Biophysical Effects was elected There are also some small groups, or separate individuals working in different institutions, or at teaching-research centers, who during their working time or their free time carr on observations and investigations of parapsychological effects.

For a number of years in Nizhny Tahal and other cities i the Ural, an investigation of "skin vision" was conducted (the so-called Rosa Kuleshova effect), which at times is groupe with parapsychological occurrences but in reality has nothin in common with them. Reports of results of numerous inspections, analogous cases observed abroad and quite recentl in Moscow, give grounds for concluding that the phenomenon of "skin vision" really exists and calls for careful study However, so far it would be difficult to come to any definit conclusions about its mechanism.

Publications in the USSR

Usually matters related to parapsychology are printed i thesis collections and reports of different conferences an symposia. Thus, for example, in 1972 five lectures related t telekinesis were published in a collection of materials of th conference, "Some Questions on Biodynamics and Bioenergetics of the Organism in Health and Pathology; Biostimulation by Laser Beams," held at Kazakh University. Sovie parapsychologists sometimes publish their work in technica journals (example, *Radiotechnology*), but mostly in popula science and mass magazines (most often, youth magazines) and in newspapers. As a rule, these are announcements o work done abroad. Very many publications are prepared b journalists who, with their characteristic inclination to exaggeration and sensationalism, at times turn assumed results o experiments into supposedly authentic ones. The number o such publications is very high. It is sufficient to point ou magazines such as *Technology—Youth, Young Naturalist* *Knowledge–Strength*. In 1973, even *Social Industry* took a stand on many occasions. Then, also, popular publications a

rule pay no attention to published negative responses of
pecialists.

Both Soviet and foreign publications are characterized by
ual exaggerations of results. Thus, going by reports in the
merican press, in 1966 in the Soviet Union telepathic experi-
ents were organized and carried out over long distances—
oscow–Novosibirsk, Moscow–Leningrad—supposedly pro-
ucing credible positive results, which obviously is a fiction.
n the other hand it was reported in *Komsomolskaya Pravda*
at during the telepathic experiments on the Apollo 14 mis-
on, positive results were obtained. Edgar Mitchell, who
ganized and participated in these experiments, wrote that
ey were of an exploratory nature, that negative results
ere obtained, and, what's more, that the number of successes
as far below that predicted by the theory of probability.
The last would deserve some attention, were it not for
itchell's statement about the promotional nature of the
xperiments.)

During the last decade, no less than 500 articles published
the USSR dealt with different questions of parapsychology.
ostly, these were poor reports of badly constructed "experi-
ents" deserving no attention. Their authors did not check
the requirements for correctness of experiments which
ere formulated by the parapsychologists themselves. N.
ulagina, the universal object of telepathic and psychokinetic
vestigations, has attracted particularly great attention in our
ess.

Who Are the Parapsychologists?

The majority of parapsychologists have neither a biological
r a psychological education. Among them are considerably
ore representatives of the exact sciences—engineers, mathe-
aticians, physicists—who, as a rule, do not have any psy-
ological training. Very frequently, within the last decade,
ecialists from these disciplines switched over to work in
dical, psychological, and physiological institutions (without
ficient backgrounds). And then, some of them want to
ickly investigate the most mysterious and most interesting
eas. As a rule, these are people qualified in their own fields,
not in psychology, who had a chance to observe some
uzzling" psychological events, or who became victims of
arlatan tricks.

Frequently, these specialists may have quite legitimate motivations: for example, to find some new type of connection which would make possible the transfer of important information (telepathy); or to find a new kind of energy, so as to influence, from a distance, the detonator of some installation (psychokinesis), etc. Strange as it may sound, some of these scientists often exhibit childlike trust and innocence. Occasionally one meets among parapsychologists psychiatrists and physicians of other specialties who, in their practice, more often than others, have a chance to observe inexplicable anomalies. There is also the category of pretty clever, skillful people who have no formal education. They are the ones who play the part of impresarios and promoters of those who really have some kind of unusual abilities. And it is precisely these people who demand recognition of parapsychology as a separate independent science.

Thus, among parapsychologists and their supporters there are charlatans as well as entirely serious specialists, who must be protected from scientifically unconscientious characters who are exploiting the former for their own ends.

The subjects of psychological investigation are, as a rule, neurotics who have increased sensitivities, and in a number of cases are even simply sick people. For example, it can be shown that in people with "skin vision" there is a distinctly pathological heightening of excitability of the midbrain, hysteria, etc.

Parapsychological Methods

In the first decades of its existence, parapsychology was using rather primitive methods of investigation and demonstration, such as card guessing, dream or thought induction, etc. Distrust and disclosures forced parapsychologists to look for new means of demonstration.

The influx of engineers and physicists had a great influence on the methods of investigation. They brought to parapsychology their own methods, assuming that the human brain functions as an electronic machine and that it is possible to transfer concepts from corresponding branches of physics for its study. Contemporary parapsychology thus utilizes a number of newer techniques, particularly from computers and laser technology. Many spokesmen for parapsychology mistakenly believe that the paranormal occurrences which they tudy are common physical occurrences based on electromagnetic radiation and that, in spite of its insignificant quality, his energy can be calculated and measured.

The study and measurement of electromagnetic fields, nown under different names (bioplasma, electroaurogram, opotential, etc.), are continued jointly with various tradi-onal methods of investigation (for example, guessing one ut of five Zener cards, induction at a distance, movement of n object without contact). Instrumental methods for the valuation of functional states of an individual, including the ewest methods, were sufficiently developed in the framework f parapsychology; for example, the Kirlian effect (photogra-hy of live tissues in high frequency currents) was used by arapsychologists sooner than by physiologists or psycholo-ists. Some special methods of investigation being developed y parapsychology, though not revealing the nature of para-sychological phenomena, sometimes prove to be useful to sychophysiology and experimental psychology.

Instrumental methods of parapsychology are also being erfected.

Ten years ago, L. L. Vasiliev wrote about experiments with "free material," where the experimenter tries to select an bject [telepathically] from a multitude of possible objects nknown to him at the time of the experiment; he concluded: The unavoidable defect of similar experiments lies in the ct that their evaluation is entirely subjective, and it is oubtful whether the subjectivity can be removed."[5] Since en, a method has been developed to analyze the results with e help of "judges" who know what was "perceived," know so what could have been sent out, and from the perceived y to find out what really was sent out. When this turns out be possible, it proves the existence of a channel of commu-cation-contact between the points of induction and recep-on. M. M. Bonhard and M. S. Smirnov have written about ese and some other indispensable and useful methods in an ticle on requirements for a "telepathic" experiment.[6]

Credibility Problem in Parapsychological Investigations

The history of parapsychology is a history of revelations ich at times attracted the participation of scientists of world-renown, such as D. I. Mendeleyev, the American physicist Robert Wood, etc. This naturally evoked and evokes the distrust and annoyance of specialists because investigation reveals too many cases of simple mystification and cheating during parapsychological demonstrations. The second reason for distrust is the irreproducibility of paranormal occurrences, that is, they do not meet the requirements of credibility as scientific facts.

This irreproducibility is explained by the difficulty in setting up the experiments, due primarily to the peculiar nature of parapsychological phenomena. They appear under special conditions and it is difficult to induce them in life. According to the description of parapsychologists, these occurrences are very elusive, unstable, and disappear whenever some inner or outer conditions appear to be unfavorable to them. The opinion is also expressed that even when favorable conditions can be maintained, it is impossible to retain, for any length of time, the states in which the appearance of parapsychological phenomena is possible.

Herein lie the main contradiction and main difficulty in interpreting parapsychological phenomena. Parapsychological literature is filled with supersensational descriptions, something like Ted Serios's ability (experimenter—Professor Eisenbud, U.S.A.) while on the Soviet-Turkish border to visualize and then to photograph from his eyes Soviet missile installations!

There were cases when professional circus performers, in particular illusionists, were invited to parapsychological experiments to show similar tricks as experts. In general parapsychology has produced a great many anti-parapsychological methods and means of demystification. Specialists o great experience in this field are found also in the Sovie Union. However, none of the disclosures have any effect on parapsychologists who are True Believers. As in religion, in parapsychology faith is more aggressive than facts. The truly aggressive effort to propagandize paranormal events, the sensationalism and promotions of other kinds or type, are connected with this faith.

Here is an appropriate quotation of Hansel, the author o a highly critical book on parapsychology published in 1970 i the USSR: "One cannot declare categorically that results o these experiments are explainable by cheating, but neithe can one think . . . that these experiments give conclusiv proof of extrasensory perception."[7]

Apparently, some of the so-called parapsychological phe- omena really exist. However, recognition of their existence hindered by uncertainty about the channel for transmission information or influence. Major hopes and efforts are now ncentrated in the study of the electromagnetic field, of or- nisms as a means for biological contact and as an informa- n carrier. These investigations are carried out on insects, imals, and man, but in recent years many authorities, at ast outwardly, do not associate their work with parapsychol- y. So far, no physical basis for these occurrences has been monstrated. Many parapsychologists see the reason for this the fact that major sciences are not involved in the phe- omena they study.

To us it appears that the fault is mostly with the parapsy- ologists themselves, who have done much to set themselves art, outside of science.

Brief Summaries

Among phenomena included in parapsychology one should stinguish between the "supernatural" phenomena imagined d promoted by mystics and charlatans, and those which ally exist but so far have not received satisfactory scientific ychological or physical explanation. The first require dis- osure and demystification. The study of the latter must be ntinued in related scientific institutions—psychological, ysiological, biophysical, medical, and others.

The manner in which universal parapsychological opinions e spread now, too often taking on the form of promotion, jectively has a negative effect, feeding unstable elements arching for a scientifically inaccessible, mysterious origin.

Analysis of the status of so-called parapsychology shows at it is badly hampered by antiscientific concepts and to a gh degree has become an area of activity by so-called ecialists. Some of them have declared themselves to be aders and participants in organizations which never even isted in our country, for example, "The Institute of Tech- al Parapsychology." It is essential to curtail the activity of little-qualified and militant parapsychologists who have ken upon themselves the voluntary and though not at all profitable function of propaganda, giving numerous lectures parapsychology, even before scientific audiences. These ctures are, in fact, irresponsible mixtures of mythology and reality. The uncritical attitude toward parapsychology of some serious scientists can be explained by positivistic carelessness toward scientific theory and methodology. There are no valid grounds for the existence of parapsychology as a separate science, since the only thing unifying parapsychologists is the mystery and inexplicability of the occurrences they study.

Also impermissible, it seems to us, is the practice of publication in papers, magazines, and the popular press of sensational, scientifically unfounded material on parapsychology. For some reason there is, in this particular field, a disregard for the tradition usually observed by self-respecting scientists: serious scientific achievements are first published in special scientific journals, and only then in popular periodicals.

There is today a definite need to organize scientific research work into areas of real occurrences described in parapsychology. Since many investigations in parapsychology are carried out by physicists and engineers, it would be expedient to evaluate the direction and scientific level of the study of the biophysical effect and electromagnetic fields generated by live organisms as a possible means of biological connection, as well as a number of other phenomena, and to do it at the Institute of Biophysics, Academy of Sciences, USSR and at the Institute for Problems of Information Transmission, Academy of Sciences, USSR. Reviewing them from the standpoint of biophysics and communications theory may help to demystify these phenomena.

Psychological Institutes and other psychological institutions should also review the possibility of strict scientific investigations of these phenomena. It obviously would be expedient to organize, within the structure of one of the psychological institutions, a laboratory for the study of individuals who possess unusual abilities (and not only of a paranormal nature). Results of these investigations should, after careful examination, obviously be published in scientific literature (and only then in popular literature).

It seems to us that attention of serious scientific organizations to the phenomena described in parapsychology will help reveal their true nature, will block the road to charlatans who are counting on the general public's quite natural curiosity about the unanswered secrets of the human psyche, and will dispel the myth of existence of a "parapsychological movement" in the USSR.

REFERENCES

1. *New Scientist* (London), January 25, 1973. Analysis of a survey conducted by Dr. Christopher Evans.
2. M. Billig. "Positive and Negative Experimental Psi Results in Psychology and Parapsychology." *Journal of the Society for Psychical Research* (London). Vol. 46, No. 753, September, 1972.
3. Robert H. Ashby. *The Guidebook for the Study of Psychical Research*. New York: S. Weiser, 1972.
4. L. L. Vasiliev. *Mysterious Phenomena of the Human Psyche*, 2nd ed. Moscow, 1963.
5. *Ibid*., pp. 134-135.
6. M. M. Bonhard and M. S. Smirnov. "The Telepathic Experiment: Necessary Requirements." *Nauka i Zhizh* (Science and Life), No. 12, 1967.

C. E. M. Hansel. *Parapsychology*. Mir (Moscow), 1970, p. 295. See U.S. edition, *ESP: A Scientific Evaluation*. New York: Scribner's, 1966.

REMOTE VIEWING: NEW RESEARCH FRONTIER

Harold E. Puthoff and Russell Targ

The following text is an abridged version of the paper "A Perceptual Channel for Information Transfer over Kilometer Distances: Historical Perspective and Recent Research," which originally appeared in the Proceedings *of the Institute of Electrical and Electronics Engineers (March, 1967). Readers who would like to study the full text of this paper, which includes 81 references, are referred to the original publication; in addition, attention is drawn to the co-authors' work,* Mind-Reach: Scientists Look at Psychical Ability *(New York, Delacorte Press, 1977), which deals with the subject matter in further detail and contains a number of valuable illustrations. Targ is a senior member of IEEE, and Puthoff a member. Mr. Targ did early work in the development of the laser and is the inventor of the tunable plasma oscillator at microwave frequencies; he is a specialist in lasers and plasma research. Dr. Puthoff is a patent holder in the areas of lasers and optical devices, and author of a widely used textbook in quantum physics. Before coming to the Stanford Research Institute, Menlo Park, California, at which research described in this paper was undertaken, Puthoff's career included service as a naval officer on a research assignment in a Defense Department laboratory.*

The full text, which appeared in the Proceedings *of the IEEE, also contained a historical introduction, numerous tables, charts, and illustrations, as well as a section on "Considerations Concerning Time," reporting on statements by subjects who had images of what the as-yet-unselected targe of their forthcoming experiment "was to be." Concerning such apparent precognition, the co-authors noted that "nothing in fundamental laws of physics forbids the apparent transmission of information from the future to the present."*

ur precognition experiments were carried out; these proved promising that a special long-range experimental program, igned to explore "this spatial and temporal remote-viewing enomenon," was initiated by the two experimenters.

From 1972 to 1975, and beyond, we have had a program the Electronics and Bioengineering Laboratory of SRI to estigate those facets of human perception that appear to outside the range of well-understood perceptual or pro- sing capabilities. The primary achievement of this program been the elicitation of high-quality "remote viewing"—the lity of both experienced subjects and inexperienced volun- rs to view, by means of innate mental processes, remote graphical or technical targets such as roads, buildings, and oratory apparatus. Our accumulated data from over fifty eriments with more than a half-dozen subjects indicate the lowing. (a) The phenomenon is not a sensitive function of tance over a range of several kilometers. (b) Faraday cage elding does not appear to degrade the quality or accuracy perception. (c) Most of the correct information that sub- ts relate is of a nonanalytic nature pertaining to shape, m, color, and material rather than to function or name. his aspect suggests a hypothesis that information transmis- n under conditions of sensory shielding may be mediated marily by the brain's right hemisphere.) (d) The principal erence between experienced subjects and inexperienced unteers is *not* that the latter never exhibit the faculty, but ner that their results are simply less reliable. (This obser- ion suggests the hypothesis that remote viewing may be a nt and widely distributed, though repressed, perceptual lity.)

Although the precise nature of the information channel pling remote events and human perception is not yet un- stood, certain concepts in information theory, quantum ory, and neurophysiological research appear to bear ctly on the issue. As a result, the working assumption ong researchers in the field is that the phenomenon of in- st is consistent with modern scientific thought, and can efore be expected to yield to the scientific method. Fur- , it is recognized that communication theory provides erful techniques, such as the use of redundancy coding to rove signal-to-noise ratio, which can be employed to pur- special-purpose application of the remote-sensing channel pendent of an understanding of the underlying mechan-

isms. We therefore consider it important to continue data co
lection and to encourage others to do likewise; investigatio
such as those reported here need replication and extension u
der as wide a variety of rigorously controlled conditions
possible.

In particular, the phenomenon we have investigated mo
extensively is the ability of a subject to view remote ge
graphical locations up to several thousand kilometers dista
from his physical location (given only a known person
whom to target). We have carried out more than fifty expe
ments under controlled laboratory conditions with several i
dividuals whose remote perceptual abilities have be
developed sufficiently to allow them at times to describe co
rectly—often in great detail—geographical or technic
material such as buildings, roads, laboratory apparatus, an
the like.

As observed in the laboratory, the basic phenomenon a
pears to cover a range of subjective experiences variously r
ferred to in the literature as autoscopy (in the medic
literature); exteriorization or disassociation (psychologic
literature) simple clairvoyance, traveling clairvoyance,
out-of-body experience (parapsychological literature); or a
tral projection (occult literature). We choose the term "r
mote viewing" as a neutral descriptive term free from pri
associations and bias as to mechanisms.

The development of SRI of a successful experimental pr
cedure to elicit this capability has evolved to the point whe
persons such as visiting government scientists and contra
monitors, with no previous exposure to such concepts, ha
learned to perform well; and subjects who have trained ov
a one-year period have performed excellently under a varie
of experimental conditions. Our accumulated data thus ind
cate that both specially selected and unselected persons ca
be assisted in developing remote perceptual abilities up to
level of useful information transfer.

In experiments of this type, we have three principal fin
ings. First, we have established that it is possible to obta
significant amounts of accurate descriptive information abo
remote locations. Second, an increase in the distance from
few meters up to 4,000 kilometers separating the subje
from the scene to be perceived does not in any apparent w
degrade the quality or accuracy of perception. Finally, t
use of Faraday cage electrical shielding does not preve
high-quality description from being obtained.

First, however, we present an illustrative example gen- ated in an early pilot experiment. As will be clear from our er discussion, this is not a "best-ever" example, but rather typical sample of the level of proficiency that can be ached and that we have come to expect in our research.

Three subjects participated in a long-distance experiment cusing on a series of targets in Costa Rica. These subjects d they had never been to Costa Rica. In this experiment, e of the experimenters (Dr. Puthoff) spent ten days trav- ng through Costa Rica on a combination business/pleasure p. This information was all that was known to the subjects out the traveler's itinerary. The experiment called for Dr. thoff to keep a detailed record of his location and activi- s, including photographs of each of seven target days at 30 PDT. A total of twelve daily descriptions were collected fore the traveler's return: six responses from one subject, e from another, and one from a third.

The third subject who submitted the single response sup- ed a drawing for a day in the middle of the series. Al- ough Costa Rica is a mountainous country, the subject expectedly perceived the traveler at a beach and ocean tting. With some misgiving, he described an airport on a ndy beach and an airstrip with the ocean at the end orrect). An airport building also was drawn, and shown to ve a large rectangular overhang (correct). The traveler had en an unplanned one-day side trip to an offshore island d at the time of the experiment had just disembarked from plane at a small island airport as described by the subject 00 kilometers away. The sole discrepancy was that the bject's drawing showed a Quonset-hut type of building in ace of the rectangular structure.

The above description was chosen as an example to illus- te a major point observed a number of times throughout program to be described. Contrary to what may be ex- cted, a subject's description does not necessarily portray at may reasonably be expected to be correct (an educated "safe" guess), but often runs counter even to the subject's n expectations.

We wish to stress again that a result such as the above is unusual. The remaining submissions in this experiment ovided further examples of excellent correspondences be- een target and response. (A target period of poolside relax- on was identified; a drive through a tropical forest at the e of a truncated volcano was described as a drive through a jungle below a large bare table mountain; a hotel-room target description, including such details as rug color, was correct; and so on.) So as to determine whether such matches were simply fortuitous—that is, could reasonably be expected on the basis of chance alone—Dr. Puthoff was asked after he had returned to blind-match the twelve descriptions to his seven target locations. On the basis of this conservative evaluation procedure, which vastly underestimates the statistical significance of the individual descriptions, five correct matches were obtained. This number of matches is significant at $p = 0.02$ by exact binomial calculation.

The observation of such unexpectedly high-quality descriptions early in our program led to a large-scale study of the phenomenon at SRI under secure double-blind conditions (i.e., target unknown to experimenters as well as subjects) with independent random target selection and blind judging The results provide strong evidence for the robustness of this phenomenon whereby a human perceptual modality of extreme sensitivity can detect complex remote stimuli.

Experimentation in remote viewing began during studies carried out to investigate the abilities of a New York artist Ingo Swann, when he expressed the opinion that the insight gained during experiments at SRI had strengthened his ability (verified in other research before he joined the SRI program) to view remote locations. To test Mr. Swann's assertion, a pilot study was set up in which a series of targets from around the globe were supplied by SRI personnel to the experimenters on a double-blind basis. Mr. Swann's apparent ability to describe correctly details of buildings, roads, bridges, and the like indicated that it may be possible for a subject by means of mental imagery to access and describe randomly chosen geographical sites located several miles from the subject's position and demarcated by some appropriate means. Therefore, we set up a research program to test the remote-viewing hypothesis under rigidly controlled scientific conditions.

In carrying out this program, we concentrated on what we considered to be our principal responsibility—to resolve under unambiguous conditions the basic issue of whether or not this class of paranormal perception phenomenon exists. At all times, we and others responsible for the overall program took measures to prevent sensory leakage and subliminal cueing and to prevent deception, whether intentional or unintentional. To ensure evaluations independent of belief structures of both experimenters and judges, all experiments were ca ed out under a protocol, described below, in which target election at the beginning of experiments and blind judging of sults at the end of experiments were handled independently f the researchers engaged in carrying out the experiments.

Six subjects, designated S1 through S6, were chosen for the udy. Three were considered as gifted or experienced sub- cts (S1 through S3), and three were considered as learners S4 through S6). The *a priori* dichotomy between gifted and arners was based on the experienced group having been ccessful in other studies conducted before this program nd the learners group being inexperienced with regard to aranormal experimentation.

The study consisted of a series of double-blind tests with cal targets in the San Francisco Bay Area so that several in- ependent judges could visit the sites to establish documenta- on. The protocol was to closet the subject with an xperimenter at SRI and at an agreed-on time to obtain from e subject a description of an undisclosed remote site being isited by a target team. In each of the experiments, one of e six program subjects served as remote-viewing subject, nd SRI experimenters served as a target demarcation team t the remote location chosen in a double-blind protocol as ollows.

In each experiment, SRI management randomly chose a rget location from a list of targets within a 30-minute driv- g time from SRI; the target location selected was kept blind subject and experimenters. The target pool consisted of ore than 100 target locations chosen from a target-rich nvironment. (Before the experimental series began, the Direc- or of the Information Science and Engineering Division, not therwise associated with the experiment, established the set locations as the target pool which remained known only him. The target locations were printed on cards sealed envelopes and kept in the SRI Division office safe. They ere available only with the personal assistance of the Divi- on Director who issued a single random-number selected rget card that constituted the traveling orders for that ex- eriment.)

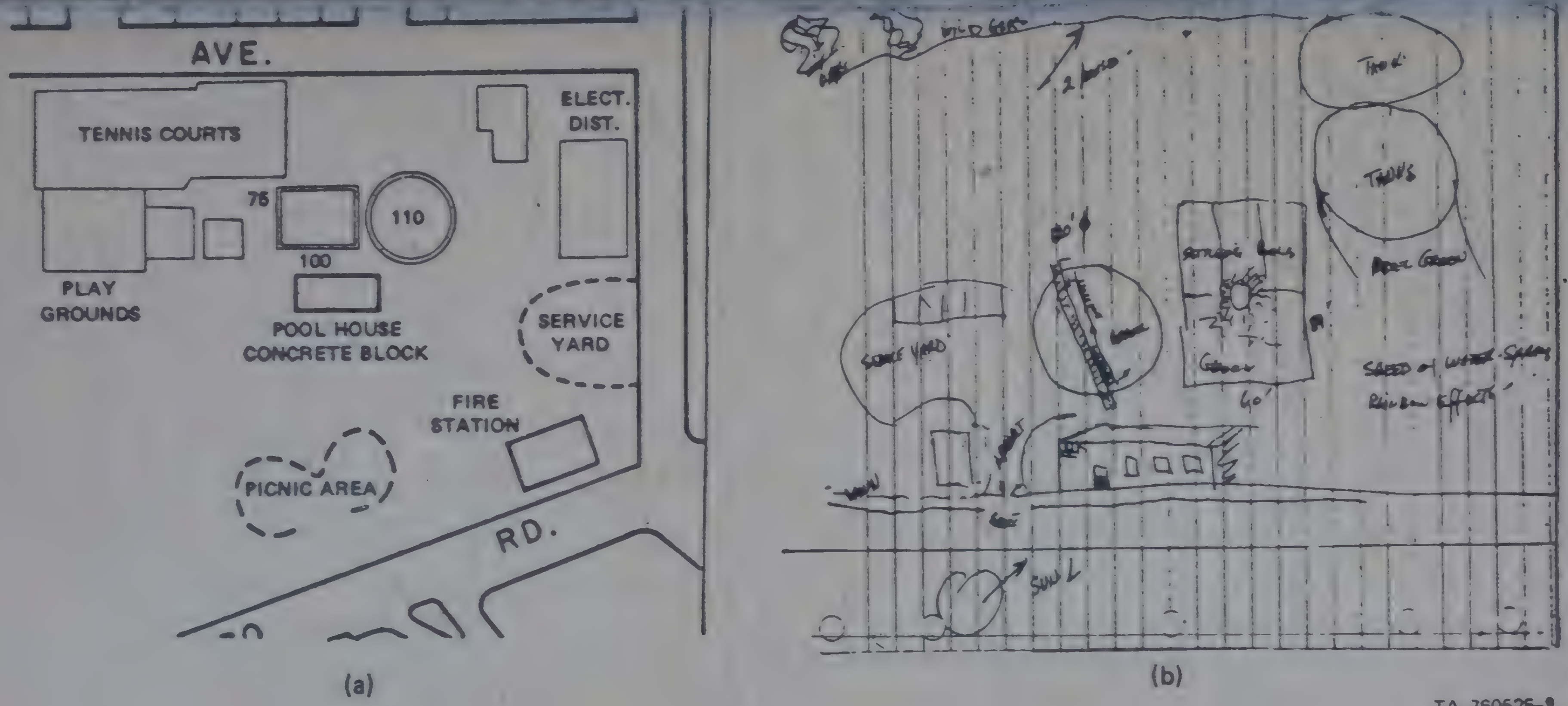
In detail: To begin the experiment, the subject was oseted with an experimenter at SRI to wait 30 minutes be- ore beginning a narrative description of the remote location. second experimenter then obtained from the Division Di- ector a target location from a set of traveling orders pre- iously prepared and randomized by the Director and kept under his control. The target demarcation team, consisting of two to four SRI experimenters, then proceeded by automobile directly to the target without any communication with the subject or experimenter remaining behind. The experimenter remaining with the subject at SRI was kept ignorant of both the particular target and the target pool so as to eliminate the possibility of cueing (overt or subliminal) and to allow him freedom in questioning the subject to clarify his descriptions. The demarcation team remained at the target site for an agreed-on 15-minute period following the 30 minutes alloted for travel.* During the observation period, the remote-viewing subject was asked to describe his impressions of the target site into a tape recorder and to make any drawings he thought appropriate. An informal comparison was then made when the demarcation team returned, and the subject was taken to the site to provide feedback.

A. Subject S1: Experienced

To begin the series, Pat Price, a former California police commissioner and city councilman, participated as a subject in nine experiments. In general, Price's ability to describe correctly buildings, docks, roads, gardens, and the like, including structural materials, color, ambience, and activity—often in great detail—indicated the functioning of a remote perceptual ability. A target, the Tower of the Hoover Institution, for example, was recognized and named by name. Nonetheless, in general, the descriptions contained inaccuracies as well as correct statements. A typical example showed that he correctly described a parklike area containing two pools of water: one rectangular, 60 by 89 feet (actual dimensions 75 by 100 feet); the other circular, diameter 120 feet (actual diameter 110 feet). He incorrectly indicated the function, however, as water filtration rather than recreational swimming. (We often observe essentially correct descriptions of basic elements and patterns coupled with incomplete or erroneous analysis of function.) The actual drawing he made included some elements, such as several tanks in the upper right hand corner, that were not present at the target site. The drawing

---

* The first subject (S1) was allowed 30 minutes for his descriptions, but it was found that he fatigued and had little comment after the first 15 minutes. The viewing time was therefore reduced to 15 minutes for subjects S2 through S6.



TA-760525-8

SWIMMING POOL COMPLEX AS REMOTE VIEWING TARGET
(a) City map of target location. (b) Drawing by Price (S1).

also reflected an apparent left-right reversal, often observed in paranormal perception experiments.

To obtain a numerical evaluation of the accuracy of the remote-viewing experiment, the experimental results were subjected to independent judging on a blind basis by an SRI research analyst not otherwise associated with the research. The subject's response packets, which contained the nine typed unedited transcripts of the tape-recorded narratives along with any associated drawings, were unlabeled and presented in random order. While standing at each target location, visited in turn, the judge was required to blind rank order the nine packets on a scale 1 to 9 (best to worst match). The statistic of interest is the sum of ranks assigned to the target-associated transcripts, lower values indicating better matches. For nine targets, the sum of ranks could range from 9 to 81. The probability that a given sum of ranks s or less will occur by chance is given by [55]

$$\Pr(s \text{ or less}) = \frac{1}{N^n} \sum_{i=n}^{s} \sum_{l=0}^{k} (-1)^l \binom{n}{l} \binom{i - Nl - 1}{n - 1}$$

where s is obtained sum of ranks, N is number of assignable ranks, n is number of occasions on which rankings were made, and l takes on values from zero to the greatest positive integer k in $(i - n)/N$. The sum in this case, which included seven direct hits out of the nine, was 16, a result significant at $p = 2.9 \times 10^{-5}$ by exact calculation.

In Experiments 3, 4, and 6 through 9, the subject was secured in a double-walled copper-screen Faraday cage. The Faraday cage provides 120-dB attenuation for plane-wave radio-frequency radiation over a range of 15 kHz to 1 GHz. For magnetic fields, the attenuation is 68 dB at 15 kHz and decreases to 3 dB at 60 Hz. The results of rank-order judging indicate that the use of Faraday cage electrical shielding does not prevent high-quality descriptions from being obtained.

As a backup judging procedure, a panel of five additiona SRI scientists not otherwise associated with the research were asked simply to blind-match the unedited typed transcripts (with associated drawings) generated by the remote viewer against the nine target locations which they independently visited in turn. The transcripts were unlabeled and presented in random order. A correct match consisted of a transcript of a given date being matched to the target of that date. Instead of the expected number of 1 match each per judge, the number of correct matches obtained by the five judges was 7, 6, 5, 3, and 3, respectively. Thus, rather than the expected total number of 5 correct matches from the judges, 24 such matches were obtained.

3. *Subject S4: Learner*

This experiment was designed to be a replication of our previous experiment with Price, the first replication attempted. The subject for this experiment was Mrs. Hella Hammid, a gifted professional photographer. She was selected for this series on the basis of her successful performance as a percipient in the EEG experiment described earlier. Outside of that interaction, she had no previous experience with apparent paranormal functioning.

Because of Mrs. Hammid's artistic background, she was capable of drawing and describing visual images that she could not identify in any cognitive or analytic sense. When he target demarcation team went to a target location which was a pedestrian overpass, the subject said that she saw "a kind of trough up in the air," which she indicated in the upper part of her drawing. She went on to explain, "If you stand where they are standing you will see something like his," indicating the nested squares at the bottom of the drawing. As it turned out, a judge standing where she indicated would have a view closely resembling what she had drawn. It needs to be emphasized, however, that judges did not have access to our photographs of the site, but rather hey proceeded to each of the target locations by list.

In another experiment, the subject described seeing "an open barnlike structure with a pitched roof." She also saw a 'kind of slatted side to the structure making light and dark bars on the wall." As in the original series with Price, the results of the nine-experiment series were submitted for independent judging on a blind basis by an SRI research analyst not otherwise associated with the research. While at each target location, visited in turn, the judge was required to blind rank order the nine unedited typed manuscripts of the tape-recorded narratives, along with any associated drawings generated by the remote viewer, on a scale 1 to 9 (best to worst match). The sum of ranks assigned to the target-associated transcripts in this case was 13, a result significant at $p = 1.8 \times 10^{-6}$ by exact calculation, and included five direct hits and four second ranks.

Again, as a backup judging procedure, a panel of five additional judges not otherwise associated with the research were asked simply to blind-match the unedited typed transcripts and associated drawings generated by the remote viewer, against the nine target locations which they independently visited in turn. A correct match consisted of a transcript of a given date being matched to the target of that date. Instead of the expected number of 1 match each per judge, the number of correct matches obtained by the five judges was 5, 3, 3, 2, and 2, respectively. Thus, rather than the expected total number of 5 correct matches from the judges, 15 such matches were obtained.

C. Subjects S2 and S3: Experienced

Having completed a series of 18 remote-viewing experiments, 9 each with experienced subject S1 (Price) and learner S4 (Hammid), additional replication experiments, four with each subject, were carried out with experienced subjects S2 (Elgin) and S3 (Swann) and learners S5 and S6. To place the judging on a basis comparable to that used with S1 and S4, the four transcripts each of experienced subjects S2 and S3 were combined into a group of eight for rank-order judging to be compared with the similarly combined results of the learners S5 and S6.

The series with S2 (Elgin, an SRI research analyst) provided a further example of the dichotomy between verbal and drawing responses. (As with medical literature, case histories often are more illuminating than the summary of results.) The experiment described here was the third conducted with this subject. It was a demonstration experiment for a government visitor who had heard of our work and wanted to evaluate our experimental protocol.

In the laboratory, the subject, holding a bearing compass at arm's length, began the experiment by indicating the direction of the target demarcation team correctly to within 5°. (In all four experiments with this subject, he has always been within 10° of the correct direction in this angular assessment.) The subject then generated a 15-minute tape-recorded description and several drawings.

In discussing the drawings, Elgin indicated that he was uncertain as to the action, but had the impression that the emarcation team was located at a museum (known to him) n a particular park. In fact, the target was a tennis court ocated in that park in the vicinity of the indicated museum. nce again, we note the characteristic (discussed earlier) of resemblance between the target site and certain gestalt ele-ents of the subject's response, especially in regard to the rawings, coupled with incomplete or erroneous analysis of the gnificances. Nonetheless, when rank-ordering transcripts 1 rough 8 at the site, the judge ranked this transcript as 2. his example illustrates a continuing observation that most of e correct information related to us by subjects is of a onanalytic nature pertaining to shape, form, color, and aterial rather than to function or name.

A second example from this group, generated by S3 Swann), indicates the level of proficiency that can be at-ained with practice. In the two years since we first started orking with Swann, he has been studying the problem of eparating the external signal from the internal noise. In our ost recent experiments, he dictates two lists for us to record. ne list contains objects that he "sees," but does not think are ocated at the remote scene. A second list contains objects hat he thinks are at the scene. In our evaluation, he has made uch progress in this most essential ability to separate emory and imagination from paranormal inputs. This is the ey to bringing the remote-viewing channel to fruition with egard to its potential usefulness.

The quality of transcript that can be generated by this rocess is evident from the results of our most recent experi-ent with Swann. The target location chosen by the usual ouble-blind protocol was the Palo Alto City Hall. Swann escribed a tall building with vertical columns and "set in" indows. He said there was a fountain, "but I don't hear it." t the time the target team was at the City Hall during the xperiment, the fountain was not running. He also made an ffort to draw a replica of the designs in the pavement in ont of the building, and correctly indicated the number of ees (four) in the sketch.

For the entire series of eight, four each from S2 and S3, e numerical evaluation based on blind rank ordering of anscripts at each site was significant at $p = 3.8 \times 10^{-4}$ and cluded three direct hits and three second ranks for the tar-et-associated transcripts.

D. Subjects S5 and S6: Learners

To complete the series, four experiments each were carried out with learner subjects S5 and S6, a man and woman on the SRI professional staff. The results in this case, taken as a group, did not differ significantly from chance. For the series of eight (judged as a group of seven since one target came up twice, once for each subject), the numerical evaluation based on blind rank ordering of transcripts at each site was nonsignificant at $p = 0.08$, even though there were two direct hits and two second ranks out of the seven.

One of the direct hits, which occurred with subject S6 in her *first* experiment, provides an example of the "first-time effect" that has been rigorously explored and is well-known to experimenters in the field. The outbound experimenter obtained, by random protocol from the pool, a target blind to the experimenter with the subject, as is our standard procedure, and proceeded to the location. The subject, a mathematician in the computer science laboratory who had no previous experience in remote viewing, began to describe a large square with a fountain. Four minutes into the experiment, she recognized the location and correctly identified it by name. (It should be noted that in the area from which the target locations were drawn there are other fountains as well, some of which were in the target pool.)

E. Normal and Paranormal: Use of Unselected Subjects in Remote Viewing

After more than a year of following the experimental protocol described above and observing that even inexperienced subjects generated results better than expected, we initiated a series of experiments to explore further whether individuals other than putative "psychics" can demonstrate the remote-viewing ability. To test this idea, we have a continuing program to carry out additional experiments of the outdoor type with new subjects whom we have no *a priori* reason to believe have paranormal perceptual ability. To date we have collected data from five experiments with two individuals in this category: a man and a woman who were visiting government scientists interested in observing our experimental protocols. The motivation for these particular experiments was twofold. First, the experiments provide data that indicate the vel of proficiency that can be expected from unselected olunteers. Second, when an individual observes a successful emonstration experiment involving another person as subject, inevitably occurs to him that perhaps chicanery is involved. e have found the most effective way to settle this issue for he observer is to have the individual himself act as a subject as to obtain personal experience against which our reported esults can be evaluated.

The first visitor (V1) was invited to participate as a sub-ect in a three-experiment series. All three experiments con-ained elements descriptive of the associated target locations; e quality of response increased with practice.

The second visitor (V2) participated as a subject in two xperiments. In his first experiment, he generated one of the igher signal-to-noise results we have observed. He began his arrative, "There is a red A-frame building and next to it is large yellow thing [a tree—Editor]. Now further left there another A-shape. It looks like a swing-set, but it is pushed own in a gully so I can't see the swings." [All correct.] He hen went on to describe a lock on the front door that he said looks like it's made of laminated steel, so it must be a Master ock." [Also correct.]

For the series of five—three from the first subject and two rom the second—the numerical evaluation based on blind ank ordering of the transcripts at each site was significant at = 0.017 and included three direct hits and one second rank or the target-associated transcripts.

Observations with unselected subjects such as those de-cribed above indicate that remote viewing may be a latent nd widely distributed perceptual ability.

. *Technology Series: Short-Range Remote Viewing*

Because remote viewing is a perceptual ability, we con-dered it important to obtain data on its resolution capabili-es. To accomplish this, we turned to the use of indoor echnological targets.

Twelve experiments were carried out with five different ubjects, two of whom were visiting government scientists. hey were told that one of the experimenters would be sent y random protocol to a laboratory within the SRI complex nd that he would interact with the equipment or apparatus that location. It was further explained that the experimen-r remaining with the subject was, as usual, kept ignorant of the contents of the target pool to prevent cueing during questioning. (Unknown to subjects, targets in the pool were used with replacement: one of the goals of this particular experiment was to obtain multiple responses to a given target to investigate whether correlation of a number of subject responses would provide enhancement of the signal-to-noise ratio.) The subject was asked to describe the target both verbally (tape recorded) and by means of drawings during a time-synchronized 15-minute interval in which the outbound experimenter interacted in an appropriate manner with the equipment in the target area.

In the twelve experiments, seven targets were used: a drill press, Xerox machine, video terminal, chart recorder, four-state random number generator, machine shop, and typewriter. Three of these were used twice (drill press, video terminal, and typewriter) and one (Xerox machine) came up three times in our random selection procedure.

The experiments provide circumstantial evidence for an information channel of useful bit rate. This includes experiments in which visiting government scientists participated as subjects (Xerox machine and video terminal) to observe the protocol. In general, it appears that use of multiple-subject responses to a single target provides better signal-to-noise ratio than target identification by a single individual. This conclusion is borne out by the judging described below.

Given that in general the drawings constitute the most accurate portion of a subject's description, in the first judging procedure a judge was asked simply to blind-match only the drawings (i.e., without tape transcripts) to the targets. Multiple-subject responses to a given target were stapled together, and thus seven subject-drawing response packets were to be matched to the seven different targets for which drawings were made. The judge did *not* have access to our photographs of the target locations, used for illustration purposes only, but rather proceeded to each of the target locations by list. While standing at each target location, the judge was required to rank-order the seven subject-drawing response packets (presented in random order) on a scale 1 to 7 (best to wors match). For seven targets, the sum of ranks could range from 7 to 49. The sum in this case, which included 1 direc hit and 4 second ranks out of the 7, was 18, a result significant at $p = 0.036$.

In the second more detailed effort at evaluation, a visiting scientist selected at random one of the 12 data packages (a rill press experiment), sight unseen, and submitted it for in-ependent analysis to an engineer with a request for an esti-ate as to what was being described. The analyst, blind as to e target and given only the subject's taped narrative and rawing, was able, from the subject's description alone, to orrectly classify the target as a "man-sized vertical boring achine."

Summary of Remote Viewing Results

Discussion: The descriptions supplied by the subjects in e experiments involving remote viewing of natural targets r laboratory apparatus, although containing inaccuracies, ere sufficiently accurate to permit the judges to differentiate mong various targets to the degree indicated. The overall esult, evaluated conservatively on the basis of a judging pro-edure that ignores transcript quality beyond that necessary o rank-order the data packets (vastly underestimating the tatistical significance of individual descriptions), clearly indi-ates the presence of an information channel of useful bit ate. Furthermore, it appears that the principal difference etween experienced subjects and inexperienced volunteers s *not* that the latter never exhibit the faculty, but rather that heir results are simply less reliable, more sporadic. Neverthe-ess, as described earlier, individual transcripts from the inex-erienced group of subjects number among some of the best btained. Such observations indicate a hypothesis that remote iewing may be a latent and widely distributed perceptual bility.

Thus the primary achievement of the SRI program was the licitation of high-quality remote viewing from individuals ho agreed to act as subjects. Criticism of this claim could in rinciple be put forward on the basis of three potential flaws. 1) The study could involve naiveté in protocol that permits arious forms of cueing, intentional or unintentional. (2) The xperiments discussed could be selected out of a larger pool f experiments of which many are of poorer quality. (3) ata for the reported experiments could be edited to show nly the matching elements, the nonmatching elements being iscarded.

All three criticisms, however, are invalid. First, with regard o cueing, the use of double-blind protocols ensures that none f the persons in contact with the subject can be aware of e target. Second, selection of experiments for reporting did not take place; every experiment was entered as performed on a master log and is included in the statistical evaluations. Third, data associated with a given experiment remain unedited; all experiments are tape-recorded and all data are included unedited in the data package to be judged and evaluated.

As a result of our combined experiences, we have learned to urge our subjects simply to describe what they see as opposed to what they think they are looking at. We have learned that their unanalyzed perceptions are almost always a better guide to the true target than their interpretations of the perceived data.

Our presentations are not intended to indicate that the precise naure of the information channel coupling remote events and human perception is understood. Rather, we wished to show only that modern theory is not without resources that can be brought to bear on the problems at hand, and we expect that these problems will, with further work, continue to yield to analysis and specification.

Furthermore, independent of the mechanisms that may be involved in remote sensing, observation of the phenomenon implies the existence of an information channel in the information-theoretic sense. Since such channels are amendable to analysis on the basis of communication theory techniques, as indicated earlier, channel characteristics such as bit rate can be determined independent of a well-defined physical channel model in the sense that thermodynamic concepts can be applied to the analysis of systems independent of underlying mechanisms. Furthermore, it appears possible to use such a channel for error-free transmission of information if redundancy coding is used. Therefore, experimentation involving the collection of data under specified conditions permits headway to be made despite the formidable work that needs to be done to clarify the underlying bases of the phenomena.

IAS SCIENCE DEVELOPED THE COMPETENCE TO CONFRONT LAIMS OF THE PARANORMAL?

Charles Honorton

The crucial question asked in the title of this paper was the bject of the Presidential Address, given by Mr. Honorton at e Annual Convention of the Parapsychological Association, niversity of California, Santa Barbara, August 21, 1975. onorton, representative of a young and active generation parapsychologists, was on the research staff of the Institute r Parapsychology, Durham, North Carolina, before he be- n a long association with the Maimonides Medical Center, ooklyn, New York; there, he participated in and eventually rected the Dream Laboratory work, concerned with dream epathy. He is Director of the Psychophysical Research aboratory, Princeton Forrestal Center, Princeton, N.J.

Explaining their decision to publish a preliminary report on emote perception" experiments performed at Stanford Re- arch Institute last fall, the editors of *Nature* openly posed e issue whether science has yet developed the competence confront claims of the paranormal. The editors of *Nature* serve a great deal of credit for having the courage to enly pose this question, and in order to explore the issue rther, I think it will be helpful to examine both "establish- ent" science and "paranormal" science.

Establishment Science

It is appropriate to begin with establishment science, the ientific orthodoxy, or "mainstream," since this is what defines and limits the scope of factual knowledge. Through its publication practices, establishment science controls the dissemination of research findings. Through the top-level policies of its executive councils, establishment science controls the disposition of research funds. And through our educational institutions, establishment science teaches what is currently known and/or believed about the nature of reality. Has establishment science developed the competence to confront claims of the paranormal?

Before pursuing this question further, I think it is important to recognize that despite the impressive accomplishments of modern science and its applied technologies, science has yet to come to grips with some of the fundamental problems underlying much of what it currently regards as normal. Among the still unanswered questions of normal science are these: What is the source of power of the atomic nucleus? How is biochemistry translated into consciousness? Where is memory? These and similar questions tend to be ignored, but are kept alive by our truly great scientists, men like Eddington, Eccles, Wigner, and Wheeler.

Those of you who are familiar with the history of paranormal research will, I think, agree that establishment science competently confronted claims of the paranormal during the period we now call the "ESP Controversy" of the 1930's. During the five-year period following publication of J. B. Rhine's *Extra-Sensory Perception*, in 1934, the scientific community responded as it should to any claim of new discovery, by disseminating both positive and negative research findings, by careful scrutiny of the experimental and evaluative techniques, and by encouraging fresh replication efforts.

During this period, there were approximately 60 critical articles by 40 authors, published primarily in the American psychological literature. Fifty experimental studies were reported during this period, two thirds of which represented independent replication efforts by other laboratories of the Duke University work. The critical issues raised during this period were, for the most part, legitimate ones, and the experimentalists were quick to modify their procedures to accommodate valid criticism.

By 1940 there was, if not a general consensus on the reality of ESP, at least a general consensus on what constituted a good ESP experiment. Yet despite the adequacy of many of the experimental studies, conceded even by the leading critics of the period, and despite the continued accumulation of new

perimental confirmations, the active confrontation between
tablishment science and claims of the paranormal went into
bernation for a decade and a half. Between 1940 and the
id-1950's, very little discussion of paranormal claims ap-
ared outside the parapsychological specialty journals. Virtu-
y no funding was available for research, and graduate
dents who wanted their degrees were strongly discouraged
om pursuing parapsychological topics. Aside from occa-
onal textbook and lecture references to obsolete criticisms
the early Duke work, establishment science, during this
riod, sought to ignore rather than to confront claims of the
aranormal.

In the 1950's, the two leading interdisciplinary journals of
ience published speculative attacks on paranormal research.
ature carried what in itself was a "paranormal" claim, in
e form of Spencer Brown's attack on probability theory
Brown, 1953). *Science* gave special prominence to George
rice's article on "Science and the Supernatural" (Price,
955). Price's confrontation with the paranormal began with
e assumption that ESP and other paranormal claims are
possible. While conceding the methodological and statisti-
l adequacy of many of the experiments purporting to
monstrate ESP. Price argued that since ESP is impossible,
perimental evidence that cannot otherwise be explained
way should be regarded, instead of ESP, as evidence of ex-
rimenter incompetence or dishonesty. Seventeen years later,
a cryptic "Apology to Rhine and Soal," Price (1972) re-
acted these allegations.

Our current situation shows definite signs that establish-
ent science is once again attempting to actively confront
aims of the paranormal. There are numerous indications
this, but I will discuss just two.

While federal grant support for parapsychological research
still virtually nonexistent in comparison with more conven-
onal research on, say, military frisbee design, a beginning
as been made in the support of a few projects. There is at
ast now some inclination on the part of funding agencies to
onsider individual proposals on the basis of merit, past ac-
omplishment, and the likelihood of continued success.

Aside from providing financial support for new research, I
elieve the greatest contribution establishment science can
ake toward the resolution of controversy over any new
aim is to allow the dissemination of research findings, both
ositive and negative. In this regard the current confrontation

between establishment science and claims of the paranormal must be considered to be highly ambivalent.

On the positive side, symposia on parapsychological methods and research findings are becoming a regular feature on the annual programs of a number of scientific societies, including the American Psychological Association and the American Association for the Advancement of Science. The affiliation of the Parapsychological Association with the AAAS in 1969 has provided an important new forum for the dissemination and discussion of parapsychological findings, primarily through symposia at AAAS annual meetings.

Yet while the AAAS encourages us to sponsor symposia at its annual meetings, its journal, *Science*, continues to suppress the interdisciplinary dissemination of our research findings. Even since our admission into the AAAS, *Science* has published only reports of negative findings. Since *Science* is a highly competitive journal, accepting only about 20 percent of the reports submitted to it for consideration, the publication of negative findings indicates that the editors of *Science* regard the problem-area to be one of some importance. If this is so, why has *Science* consistently rejected competent experimental reports with positive findings?

There is no more effective means through which to answer *Nature*'s editorial challenge than to allow interdisciplinary consideration of *both* positive and negative findings in this area. This would allow the interdisciplinary scientific community to know just exactly what *is* being claimed about the paranormal; to assess for itself the degree of competence and the level of development; and to stimulate new independent replication efforts.

Yet despite encouraging indications to the contrary, I think the current status of the situation is still subject to the constraints imposed by what I shall call "Planck's Second Constant": "A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die and a new generation grows up that is familiar with it." For the moment, I think we must conclude that while *Nature* has developed the competence to confront claims of the paranormal, *Science* hasn't.

Paranormal Science

Has parapsychology developed the competence to confront
ims of the paranormal? Not as much as we would all like,
t much more than anyone has a right to expect given the
el of support, the degree of irrational prejudice, and the
all number of competent investigators who have been able
sustain themselves in this field. In fact, I suggest to you
at some of our paranormal claims have much more support
hind them than many of the more widely accepted claims
normal science.

Let us examine the replication status of findings in
rapsychology and other areas of behavioral research. Al-
ost all of the discussion of this important topic has occurred
thout the necessary bookkeeping.

First, let us return to the card-guessing experiments of the
30's and examine the replicability of that work. The cen-
l claim upon which ESP was based during this period was
rmulated as follows: “Is it possible repeatedly to obtain
sults that are statistically significant when subjects are tested
r knowledge of (or reaction to) external stimuli (unknown
d uninferable to the subject) under conditions that safely
clude the recognized sensory processes?” (Rhine *et al.*,
40, p. 15.)

Even among parapsychologists there is a rather widespread
lief that most of the independent replications of the early
uke work were nonconfirmatory, and I suspect this may be
pecially true among those of us who were not around in the
30's (which, incidentally, accounts for about three fourths
the participants at this convention). In fact, I was sur-
ised myself to find that this wasn't so when I undertook a
view of all of the English-language ESP experiments report-
during the period between 1934-1939 (Honorton, 1975a).

The results of this survey, in terms of replication, are
own in Table 1.

This work involved a data base of approximately 3.3 mil-
n individual trials. As Table 1 indicates, 61 percent of the
dependent replications of the Duke work were statistically
nificant. This is 60 times the number of significant studies
e would expect if the significant results were due to chance
ror. Of course, there is also experimental error, and some
these studies left much to be desired in terms of methodol-
y. Yet on the basis of my own study of this literature, I

Table 1

All English-Language ESP Experiments Involving Statistical Assessment of Data, 1934-1939 Inclusive

	Number of experiments	Number reporting statistical significance (p. .01)	Percent significant
Duke group	17	15	88
All other Laboratories	33	20	61
Total	50	35	70

x^2 (Duke vs. Other x significant vs. nonsignificant) = 1.70 (1 degree of freedom)

concluded that at least 33 of these 50 studies were methodologically adequate on the basis of the experimental reports.

The next question, then, is this: Were all of these laboratories suppressing mountains of nonsignificant data? I think this is very unlikely, judging from the temper of the times, but it is not necessary to rest our case on this. It is legitimate to ask what volume of research data could realistically have been generated during this period. It is important to recall, in considering this question, that in the 1930's there were only two funded research laboratories in parapsychology, one at Duke University and the other at Stanford University. (I believe the Stanford endowment still exists, although the Stanford officials have consistently allowed it to be used for other purposes.) It is also important to bear in mind that the volume of *reported* work during this period was 3.3 million individual trials, and that it takes time to shuffle ESP cards and to record subjects' guesses.

About six months ago, my friend and colleague Edwin May opened a suitcase which he had carried all around India. Inside was an electronic random number generator. Just to illustrate what a little technology will do for an impoverished research area, this instrument is the third or fourth generation version of an instrument that was introduced in parapsychology only five years ago by Helmut Schmidt. It looked to me ore like something one would find at Mission Control in ouston than in a parapsychological research laboratory in epest Brooklyn. Ed explained the myriad of controls that corate the front panel. "These knobs," he said, "allow us to k 'physics-type' questions about PK. This one allows us to just the trial rate from one trial every ten seconds to a mil- n trials in ten seconds, in millisecond increments, of urse," he added with a smile. Eager to play, we decided to n a control series of random checks. Several minutes and llions of trials later, I suddenly realized that we had just lected more data in that few minutes than had been re- rted during the entire sixty-year period between 1880 and 39.

Even if we assume a position of extreme conservatism and ow for the possibility that for each published study be- een 1934 and 1939 there were five studies that were not ported and were nonconfirmatory, that is, 250 unpublish- studies with 16.5 million nonsignificant trials, the rate of plication of the ESP hypothesis would still be highly sig- icant.

plication in Parapsychology and Other Areas

It has become clear to me that the replication status of rapsychological findings must be viewed within the larger spective of replication in other areas of research.

Last year at Maimonides we completed a two-year dream earch project which was supported by the National Insti- e of Mental Health. This project was designed to replicate d extend our earlier telepathic dream work as well as to re- cate certain nonparapsychological findings—nonparanor- l—findings by another investigator (Honorton and man, 1975). The latter, while still analyzing data from a ject begun six years earlier, had published several prelimi- ry accounts of findings based on general impressions of his a. His tentative conclusions had gained fairly widespread eptance, despite the exploratory character of his initial re- rts. To make a long story short, we not only failed to repli- e our own telepathic dream findings, we also failed to licate three of the four nonparanormal claims of this other estigator.

Recently, a number of us have begun exploring the pos- le role of mental imagery as a mediator of psi (i.e., para- rmal information flow). Six reports have appeared thus far ating ESP performance to one very popular scale which purports to measure the vividness of imagery. While three of these studies showed some relationship between psi and imagery, as defined by this scale, the direction of the relationship has shown a disconcerting tendency to vary from study to study. We might be tempted to ascribe such lack of consistency to that perennial scapegoat, the "elusiveness of psi," were it not for the fact that similar reversals between this scale and a variety of nonparanormal performance measures seem to be more the rule than the exception (Honorton, 1975b).

I could go on, but I know that many of you can provide similar instances of how the findings of more established—nonparanormal—fields cannot be relied upon. My point is simply this: The problem of replication did not begin and does not end with parapsychology. In fact, parapsychology is actually in a better position vis-à-vis replication than many other areas of behavioral research.

Let us take a brief look at the publication practices of the American Psychological Association, for example. A number of studies have been reported of APA publications practices. I will summarize just two. Sterling (1959) sampled 362 research reports published in three of the leading APA journals. He found that while 97 percent of the studies basing conclusions on significance tests reported rejection of the null or specific hypothesis(es), *none* of the research reports were replications of previously reported findings. Similarly, Bozarth and Roberts (1972) sampled 1,344 research reports published in four additional journals. They found that while 94 percent reported findings based on the rejection of the null or specific hypothesis (es), *less than 1 percent* were replications of previous findings. I do not see how we can avoid the conclusion that it is impossible to assess the validity of findings in many areas of psychology.

Now let us return to our own situation and examine the replication status of research findings in contemporary parapsychology. Let us begin by examining what is being reported right here at this meeting, and then step back and see how well or poorly some of our findings are holding up relative to similar earlier work.

Two dozen research laboratories are represented on the program of this year's convention. There are 48 experimental reports with findings based at least in part on significance tests. Rejection of the null or specific hypothesis (es) is reported in 63 percent of these studies, and by 17 different labatories. Moreover, 73 percent of the studies reported at is convention are replications of previously reported findgs. Of these, 43 percent report significant confirmation of rlier findings.

I will now examine in somewhat greater depth two areas at have sustained systematic research efforts over a period years. My selection is somewhat arbitrary and reflects my vn research interests. There are other areas that could serve ually well.

Internal Attention States

The first area involves the use of internally deployed attenon states, brought about by a variety of means, to detect d register paranormal information flow. We can formulate e central claim or finding in this area as follows: Psi inrmation flow is more easily detected and recognized when e receiver is in a state of sensory relaxation and is minimal- influenced by other forms of perception.

A good case can be made for this claim on analytical ounds alone, and the empirical support for it pervades arly every aspect of our literature, from our studies of ltural practices and spontaneous experiences to our clinil case histories and experimental reports.

Let us first examine some of the analytical considerations. or these we are indebted to the late Cambridge philosopher . D. Broad, whose theoretical contributions to parapsycholgy have not yet received the attention and recognition they early deserve. Broad was among the first to suggest that if ranormal phenomena occur at all, they are probably much ore pervasive in our everyday lives than has traditionally en recognized. Drawing an analogy with the discovery of agnetic fields, for example, he wrote:

> Had it not been for the two very contingent facts that there are lodestones and that the one element, iron, which is strongly susceptible to magnetic influences, is fairly common on earth, the existence of magnetism might have remained unsuspected to this day. Even so, it was regarded as . . . anomaly until its connection with electricity was discovered, and we gained the power to produce strong magnetic fields at will. Yet all this while, magnetic fields had

> existed and had been producing effects whenever and wherever electric currents were passing. Is it not possible that natural mediums might be comparable to lodestones, that paranormal influences are as pervasive as magnetism, and that we fail to recognize this only because our knowledge and control of them are at about the same level as were men's knowledge and control of magnetism when Gilbert wrote his treatise on the magnet? (Broad, 1953.)

Broad pointed out that psi interactions need not involve conscious experience at all, that those that do are merely the tip of an iceberg, and that below the surface, psi interactions may occur as totally unconscious influences on our moods, our dispositions, our thought processes, and so on. As we have already seen in this convention, and in the literature over the last several years, experimental support for this far-out notion has begun to emerge through the work of Stanford and his associates (Stanford, 1974; Stanford *et al.*, 1975).

As for the relative rarity of *recognized* psi interactions (i.e., psi *experiences*), Broad's analysis of the conditions necessary for the recognition of paranormal input makes it clear that these conditions are normally seldom fulfilled. This analysis also makes it clear why psi experiences are so often associated with internal attention states.

Suppose, recasting Broad's analysis in the communications terminology proposed by Morris (1975), that the output of an information source serves as an influence on a sensorially remote receiver. In order for the receiver influence to be detected and identified with its source, all of the following conditions are necessary and must be fulfilled:

1. The receiver influence must be detected. With human receivers, this means that the influence must take the form of overt behavior or conscious experience which the receiver can and does attend to.
2. The experience must be sufficiently prominent, or carry sufficient impact, to allow the receiver to distinguish it from among the many other nonparanormal inputs which are concurrently influencing him. In this context normal perceptual, somatic, and cognitive influences on the receiver may constitute sources of *noise*.

3. The experience must be stored and reported prior to receiver-source contact through normal channels, otherwise it cannot be considered evidential.

4. There must be subsequent confirmation of a meaningful correspondence between the source and the receiver. This correspondence must be sufficiently unusual or consistent over repeated efforts to eliminate chance coincidence as a reasonable explanation.

These detection criteria can account for some of the most ominent features of spontaneous paranormal experiences. e high incidence of spontaneous psi experiences occurring dreams and other internal attention states would be expect- inasmuch as such states are associated with deafferen- ion—sensorisomatic noise-reduction—and deployment of ention inward, toward mentation processes such as ughts and images which may serve to carry psi informa- n, thus increasing the likelihood of *detection*. The utiliz- on of imagery and other forms of mentation in the pro- ssing of environmental information has been demonstrated studies of subliminal stimulation, which, incidentally, is al- facilitated by internal attention states (Dixon, 1971).

The high incidence of paranormal experiences occurring ween friends and relatives, and the low incidence of occur- ce between remote acquaintances and strangers would also expected, since there is naturally a greater likelihood of *firmation* in the former case. Unless the source and re- ver know each other and are in relatively frequent contact h one another, the likelihood of confirmation is very low. rthermore, unless the relationship between the two permits ne degree of intimacy, it is unlikely that either would be ficiently uninhibited to share unusual personal experiences.

Similarly, the high incidence of crisis cases involving situa- ns of sudden, unexpected emotional significance would be pected, since such experiences carry more impact, and are re likely to be remembered and recalled than relatively vial mundane experiences.

The association between paranormal information acquisi- n and internal attention states can be traced back at least far as the Vedic period of India and the reports of *siddhis* paranormal powers manifest in yogic meditation. Then re are the claims of the powers of entranced medicine men d the shaman of the nontechnological societies; the "higher enomena of hypnotism" reported by the early mesmerists;

the phenomenological descriptions of cognitive strategies employed by gifted individuals, such as Mary Craig Sinclair; and finally, the cross-cultural validation of dreaming as the state-of-choice in spontaneous psi experiences and psychotherapeutic case reports.

Now let us look at the status of controlled laboratory experimentation in this area. I have been able to find 89 experimental studies, spanning a 30-year period, and involving controlled investigations of psi retrieval in internal attention states brought about by dreaming, guided-imagery and hypnosis, meditation, perceptual isolation, and progressive muscular relaxation (Honorton, 1977). At least two different laboratories have reported work with each of these five procedures, and this work was contributed by a total of 26 different laboratories or investigator-teams. For present purposes, I will examine these studies primarily from the standpoint of replicability. The question is this: How many of the studies with each procedure and overall have reported clear-cut evidence that paranormal processes were operating within the design of the experiment, and how does this number compare with what we would expect purely on the basis of chance error? For the purpose of this analysis, I am defining as "significant" only those studies in which, on the basis of overall psi scores or clearly stated predictions, the investigators rejected the null or specific hypothesis (es) at the .05 level or lower. These results are summarized in Table 2.

The replication rate with each of these five procedures i statistically highly significant ($p < 10^{-5}$). Overall, of the 8 experiments, 50 reported rejection of the null or specific hypothesis (es). This is 10 times the number we would expec on the basis of chance error. Significant findings were reported by 17 of the 26 laboratories; that is, by two thirds of th laboratories involved.

Over 60 percent of these studies involved free-respons ESP designs, which, as you know, are much more time-consuming than shuffling ESP cards. Nevertheless, let us assum for the sake of extreme conservatism, that for each publishe study there are five that were not reported and were not statistically significant. This would require 445 unreported, nonsignificant studies, and I cannot imagine how anyone who familiar with the amount of time these studies require an with the level of support and research output of this fiel could really believe that there are anywhere near this numbe of unreported studies, but let us assume that there are: Th

Table 2

Replication Status of Experimental Studies Involving Psi Retrieval During Internally Deployed Attention States, 1945-1975

Procedure	N experiments	N expr. signif. ($p < .05$)	Expected N signif. (chance = 5% x N)	Binomial $p^* <$	N labs	N labs confirming
Dreaming	18	10	0.90	1×10^{-5}	4	2
Hypnosis-guided imagery	39	19	1.95	1×10^{-5}	19	8
Meditation	11	8	0.55	1×10^{-5}	4	3
Perceptual isolation	15	8	0.75	1×10^{-5}	7	2
Progressive relaxation	5	5	0.25	1×10^{-5}	2	2
Totals	89	50	4.45	1×10^{-10}	26	17

* Based on the N studies significant at $p<.05$ out of the totalN studies for each procedure.

rate of replication in this area would still be highly signif cant.

Now let us compare these data with the new work bein reported here at this conference. This year, there are 11 ex perimental reports involving psi and internal attention state contributed by five different laboratories. Six of these exper ments report rejection of the null or specific hypothesis (es) This gives a replication rate of 55 percent, compared to th 56 percent rate for the earlier work. These significant confi mations are reported by four of the five reporting labor tories, and this year's crop is 20 times the number we woul expect on the basis of chance error. This harvest would sti be significant if we were to posit five nonsignificant and unr ported studies for each one reported at this conference.

I cannot take time now to describe some of the more inte esting secondary findings related to this area. Elsewhere have shown that the information rate for psi studies combi ing free-response designs with internal attention states several orders of magnitude larger than for forced-choi guessing designs (Honorton, 1975c).

Nor have I discussed the quality of methodology in the studies. These experiments all utilized standard procedur for eliminating sensory contact between source and receive for randomizing targets, and so on. It is doubtful that any them would live up to the reputation for super-control e joyed, for a time, by Soal's work with Shackleton and St wart. But this is not necessary. Each of these studies asked question and provided a tentative yes-no answer, which turn, led to another study, in-house and by another labor tory. This, after all, is how normal science operates, at lea in its better moments. The experimental claim results in a other experiment rather than in a posthumous attack on t integrity of an individual investigator. Soal's honesty wou not now be the topic of idle speculation if he had had a rep cable procedure rather than a gifted subject.

The existence of a new or hitherto unrecognized natu phenomenon cannot rest upon unrepeatable experiments isolated investigators working with unique practitione Gifted subjects have much to contribute to our knowled and understanding of psi, but so far we have largely wast their talents.

Microdynamic Psychokinesis

The second area I have selected for special attention in- lves psychokinesis on microphysical systems. The central im or finding in this area may be formulated as follows: A man observer provided with sensory feedback to an exter- l source of randomness produced by a microphysical ocess, can, by attending to the feedback signal, effect an in- ence on that microphysical process with the result of de- easing its randomness.

Order out of disorder, as a function of intention, perhaps. ne history of PK, even more than that of ESP, is tainted th fraud, malobservation, and uncontrolled events occur- ng in suspicious circumstances. Despite the apparently good ntrols employed a century ago by Sir William Crookes in s investigations of D. D. Home, or the Naples sittings with usapia Palladino, or even the impressive credentials of cer- n members of the Metal Benders' Guild in contemporary reat Britain, such observations have never carried great nviction outside the small circle of firsthand observers esent.

Moving from the macroscopic effects associated with pol- rgeists, hyperactive tables, and compass-needles, into the ena of controlled experimentation, perhaps the most obvi- s trend has to do with the shrinking size of the PK target. hen J. B. and Louisa Rhine salvaged PK from the darkness séance rooms and noisy tables, they introduced light, dice, d quarter distributions of the half-set.

Yet despite the "overwhelming" evidence for PK provided the quarter distribution data, I believe psychokinesis might ve died prematurely in the late 1940's had it not been for e work of W. E. Cox. Ed Cox nurtured PK research for arly two decades. He replaced the dice with, among other ings, beebees running down paper straw pathways, and his search provided some of the first really strong evidence, not ly for the occurrence of PK but also for the hypothesis at PK is *goal-directed*.

Helmut Schmidt has replaced Cox's beebees with electrons, d has substituted solid state data paths for Cox's paper raws. His electronic random generators show good random- ss when run in unattended control checks and highly sig- ficant departures from randomness when human subjects attempt to exert feedback-guided influence. Schmidt has found in a series of highly ingenious experiments that the internal complexity of the instrument does not appear to affect the degree of influence, and he too concludes that PK is goal-directed.

Since Schmidt introduced this line of research, 16 microdynamic PK experiments have been reported, primarily by Schmidt and his collaborators. The results are summarized in Table 3.

Table 3

Survey of All Microdynamic PK Experiments, 1970-1975

Report	Experiment	*p*
Schmidt (1970)	Preliminary series	.12
	Main series	.00087
Schmidt and Pantas (1971)	Preliminary series	.0124
	Series I	6.3×10^{-5}
	Series II	.0093
Matas and Pantas (1971)		.0143
Andre (1972)	Experiment I	.1067
	Experiment II	.0093
Honorton and Barksdale (1972)	Group experiment	.034
	Individual Ss experiment	.826
	Single subject experiment	3.4×10^{-6}
Schmidt (1973)	Exploratory experiment	5.6×10^{-5}
	Confirmatory experiment	2.1×10^{-8}
Schmidt (1975)	Experiment I	.00084
	Experiment II	.0017
Stanford *et al.* (1975)		.0069
Total	$X^2 = 202$, 32 *df*, $p\ 10^{-10}$	

Thirteen of these sixteen studies, that is, over 80 percent, lded statistically significant outcomes. This is 16 times the mber of significant studies we would expect on the basis of nce error. However, since data collection is so much fas- in this area, let us assume for the sake of extreme conser- ism that for each of these reported studies there are 10 ich were not reported and which are not statistically sig- cant. That is, let us posit 150 unreported, nonconfirmatory dies. Even if this were so, the replication rate for micrody- mic PK would still be highly significant.

Now let us compare this with the new work being reported re at this conference. This year there are seven experimen- studies of microdynamic PK, contributed by four different oratories. Five of these seven studies report significant con- nation of microdynamic PK influence, and these positive lications are contributed by three of the four reporting oratories. This is a 71 percent confirmation rate, is 14 es the number we would expect by chance error, and com- res nicely to the 80 percent rate for the earlier studies.

Taking Parapsychology Seriously

It is time we take parapsychology and its phenomena seri- sly, that we stop being defensive with people who are skep- l but are unfamiliar with the serious literature of this d, its better research, the degree of control, and advances methodology. I believe that it is time for us to go to the rnals such as *Science* and to the funding agencies in shington, and demand that they at least examine our seri- literature before they reject our papers and our grant posals. We can present a strong case for our field and it is e that we do so.

I really wanted to take this occasion to develop some culative areas, but considering the slender basis of support ich is currently sustaining this field, I decided upon the sent approach. Most of the participants at this conference here at great personal expense, do not know whether their earch will be supported six months or a year from now, if s supported now, and cannot publish their research in jour- s that have a circulation of more than 2,500.

We must not continue merely bemoaning the fact that apsychology is not accepted by establishment science; that, pite the fact that we know our literature and what we are doing in our laboratories, there must be something wrong with it since it is not accepted; continuing to play the game that eventually, after all, science is objective, and our findings will eventually become accepted on their merit. I do not believe this. We have been struggling against irrational prejudice for a long time. Patience goes only so far and I think that if the situation is going to change, we are going to have to change it. Our findings deserve better than they have received from the scientific establishment. If our work is faulty, it should be criticized, but the criticism must be substantive, not *a priori*. The scientific community has an obligation to assess, without prejudice, the serious research in this area. The only way in which this can be done is through dissemination of research reports to a wide scientific audience. This would have the effect, as the *Nature* editors suggested, not of providing an endorsement of any claims, but rather of stimulating critical discussion and further replication. I can see no basis of justification for journals such as *Science* refusing to accept for publication research reports of good quality.

Subliminal Stimulation and Biofeedback

There are some very provocative parallels between two are as of nonparanormal research and the two areas of paranor mal research I have focused on in this address. These area of "normal" research are subliminal perception and biofeed back. I do not have time to explore either of these in grea detail, but I would like to at least highlight a few points tha I think are of special interest.

I think anyone who is familiar with the internal state work in parapsychology and who has read Norman Dixon' (1971) careful survey of the subliminal perception literatur must be struck by the parallels. Both subliminal and psi influ ences are facilitated by internal attention states, both are sub ject to subtle experimenter effects and situational factors, an both involve the transformation and mediation of stimulus ir fluence through on-going mentation processes. Perhaps th similarity is more than skin deep, but the point I wish to em phasize now is that we can begin to exploit these similaritie to advantage in using subliminal versus psi comparison Those of us who have been involved in free-response p research have not had any real basis of comparison in term of how strong our psi mentation-target correspondences ar lative to strength and quality of correspondences in a weak nsory setting. A beginning has been made in this direction mith, Tremmel, and Honorton, 1975), and to the extent at the same kinds of stimulus distortions and transforma- ns occur in *both* subliminal and psi tasks, we can have eater confidence in the informational characteristics of our findings. In fact, I suggest that this may be a useful proto- pe for a new methodology for studying psi processes, one at moves us away from a strictly theoretical baseline in as- sing the significance of psi results.

The implications of biofeedback for parapsychology have ually been discussed in terms of developing biofeedback ortcuts to psi-conducive states. I agree that this is poten- lly very important, but I would also suggest that what has en referred to as the *goal-directedness* of psychokinesis is und also in biofeedback in the form of *passive volition.* bert Thouless described the mind-set associated with his n success in PK dice experiments in the late 1940's as "ef- rtless intention to succeed." This description would immedi- ly be recognized by contemporary biofeedback researchers passive volition. Elmer Green (1973-74) has described ssive volition with an analogy to farming. He says, "A rmer (a) desires a crop, (b) plants the seed, (c) allows ture to take its course, and (d) reaps."

We are puzzled by the fact that a subject can psychokineti- lly influence a process which he knows nothing about solely the basis of intention to succeed and the guidance of a ripheral feedback display. Yet this is exactly what occurs in ofeedback. Let us take the example of single motor unit ntrol. The motor unit is the functional unit of striated uscle. It consists of the nerve cell body, located in the nal cord, its axon, terminal branches, and all the muscle fi- rs supplied by these branches. A single spinal motorneuron ay supply anywhere from a half-dozen to several hundred uscle fibers. It is now known, chiefly through the work of hn Basmajian (1972), that a human observer can learn to late and control single motor units using sensory feedback chniques. This despite the fact that most subjects do not en know what cells look like or where they are located. re is Basmajian's summary of his results:

> . . . normal human beings can quickly, in a matter of 15 or 20 minutes, be trained to isolate only one motor unit from the population of perhaps 100

> or 200 which are within an area of pickup of an electrode pair. They can suppress all of the units, fire single units, they can manipulate those units, turn them on and off easily, they can suppress the one they started with, pick up another one, train it, suppress it, turn to a third and then, on command, they can respond with signals from the unit that you choose for them to respond with. (Basmajian, 1969.)

I think it is safe to say that ten years ago the voluntary control of a single cell would almost certainly have been regarded, along with psychokinesis, as a paranormal claim. And perhaps it is. Basmajian and a number of other biofeedback researchers have resurrected the concept of volition as a metaforce to account for this type of control. Is it possible that PK has always been closer to us than we've realized? This is, for the present, farfetched speculation. We now have the methodology and the beginnings of a technology, however, to begin asking such questions as this on an empirical basis.

Normalization of the Paranormal

Has science developed the competence to confront claims of the paranormal? I believe the most satisfactory answer to *Nature*'s question is this: We have begun to develop competent approaches to the paranormal. We have developed at least a few approaches that work well enough to allow us to build upon them. The job will not be done until we have succeeded in eliminating the "para-" and have normalized these phenomena. This will require further articulation of the positive attributes and antecedent conditions of psi, as well as the determination of the role of psi in our normal life experience. We are beginning to make progress in this direction, on several fronts, and I have tried to indicate a few of these.

I believe we should give up our "para-" terms, even the one that serves to identify this Association. Psi phenomena are as relevant to physics and, I suspect, to neurophysiology as they are to psychology. We are studying psychophysica interactions, and I would suggest that the term *psychophysic* more properly identifies the range of activities we have called parapsychological.

My own inclination, which is provisional and subject to
odification as a result of new data, is that we are, along
h physics and neurophysiology, on the threshold of a new
entific enterprise, that we are beginning to do some serious
chophysical reality-testing, perhaps to erect a bridge con-
cting the perennial dualities of mind and matter, physics
d psychology. We are, I believe, dealing on an empirical
sis with what Eddington called "mind-stuff," and what we
ve found thus far supports the notion that mind is a real
ce in nature. I suggest that in the years ahead it will be
ful for us to reconsider the type of theory proposed in var-
s forms by Frederic Myers, Henri Bergson, and Sir John
cles, that the brain is a *transmitter* of mind rather than its
erator, and that mind manifests through the brain by psy-
okinetic influence on neural tissue.

Observation and Participation in Science

In closing, I would like to speak briefly about one other
a of psi research, the role of the experimenter. Experi-
nter effects represent sort of a skeleton in our collective
set. This is a topic we discuss not infrequently in private,
seldom in public. We are concerned with the possibility
t we ourselves, as experimenters, may to some extent be
source of the psi influences we observe in our laboratories.
Of course there are different kinds of experimenter effects,
ich range over a wide spectrum, from experimenter
ud on one end of the scale, on through to experimenter psi
the other end of the scale. I think it is interesting to note
t many of the successful experimenters in psi research have
o been successful subjects. Both J. B. Rhine and Robert
ouless were able to demonstrate PK effects with dice. The
ench pioneer in the cognitive study of psi, René Warcol-
r, was successful as a percipient in telepathy-oriented
wing experiments, and so on. Among our currently active
perimenters, William Braud was one of the most successful
eivers in the Brauds' work on psi and progressive relax-
on. Rex Stanford was successful in an EEG-telepathy ori-
ed study with Ian Stevenson. Robert Morris showed that it
possible to gain nonrandom entry points in tables of ran-
n numbers using a complex psi procedure. (Morris's
dies on cognitively complex psi provide further evidence
the goal-directedness of psi.)

My own accomplishments as a subject mainly involve a series of PK experiments that I reported several years ago (Honorton and Barksdale, 1972). Helmut Schmidt lent me a manual random number generator, and I was teaching at the time, so I decided to do a group experiment with my students. I formulated the hypothesis, based on Ted Serios and Kulagina and other macroPKers, that unlike ESP, PK may require a high level of arousal and activation. I had my students alternate PK runs in which they tensed and relaxed. The results were very nice: The muscle tension runs were associated with significant psi-hitting. The overall results were significant and this was due to the contribution of the muscle tension condition. I returned to the laboratory very pleased with myself for having confirmed my hypothesis. I then set Warren Barksdale to the task of replicating this experiment with 20 individual subjects, following the same procedure for relaxation and tension. His experiment yielded only chance results. We then decided to run a third experiment in which I would be the solo subject and Warren would be the experimenter. I tensed and relaxed, and we alternated which of the two display lights was target for an equal number of runs, and so on. The muscle tension runs were about 3.5 standard deviations above chance and the relaxation runs were about 3.5 standard deviations below chance. Again, my hypothesis had been confirmed. The question that now arose in my mind, however, was who were the subjects, or subject, in that first successful experiment?

Recently, my very good friend John Stump really threw me a curve. When my study dealing with another type of experimenter effect, involving the demeanor of the experimenter as an influence on subjects' psi performance, appeared (Honorton, Ramsey, and Cabibbo, 1975), John examined the control data. In this study, there were two samples of "control random checks." These were run by me, manually depressing the random generator response buttons and attempting *not* to exert a psi influence on the instrument. Sample A was collected before the experimental data, and Sample B was collected after the experimental data. Taken separately, each sample provided good randomness. What John Stump found, however was that looking at the difference between the two samples there is a significant difference for each of the four analyses Since this was a two-choice generator, we looked for sequence effects: how many times did "red" follow "red"; how many times did "red" follow "green"; "green" follow "green"

een" follow "red"? In each of these four cases, a nonsig-
cant positive or negative deviation in Sample A was fol-
ed by a nonsignificant deviation in the opposite direction
Sample B. The overall result of this was associated with a
bability of 10^{-5}. Now the experimental hypothesis was
firmed at the .001 level.

ohn Stump went a step further. He used this post hoc
lysis as a pilot study. His confirmation consisted of going
k to an earlier study which I had reported with Malcolm
sent as subject (Honorton, 1971). Again there were pre-
post-experimental random checks; and again the random-
s was good within each sample, but with deviations in op-
ite directions, so that the difference was again significant
= .002).

t appears that John Stump has confirmed Jule Eisenbud's
othesis about what he has colorfully termed the "individ-
mind-prints" of the experimenter. I frankly do not know
at to do about this problem, and I am sure that most of
don't either. But we had better start giving serious con-
ration to these experimenter psi effects, and, to at least
w that we are not alone, I will close now with a comment
m the distinguished Princeton University physicist John
hibald Wheeler, which I think is pertinent to this:

> Insofar as we've learned to understand the quantum principle, it's the small tip of an iceberg that tells us that the momentum and the position of an electron are not qualities that exist independently of us, but depend upon our consciously making a decision to measure the position and the momentum in order to bring these features into evidence. I think that through our own act of consciously choosing and posing questions about the universe we bring about in some measure what we see taking place before us. Therefore, I think the word "observing" is inadequate. A better word is "participation." We are going to come to appreciate that the universe itself in some strange way depends upon our being here for its properties. (Wheeler, 1973, p. 32.)

REFERENCES

1. Andre, E. "Conformation of PK Action on Electronic Equipment." *Journal of Parapsychology*, Vol. 36, 1972, 283-293.
2. Basmajian, J. "Panel 2 Research Reports: EMG Feedback." *Proceedings of the First Annual Meeting of the Biofeedback Research Society*, 1969, 2, 4.
3. ———. "Electromyography Comes of Age." *Science*, Vol. 176, 1972, 603-609.
4. Bozarth. J. D., and Roberts, R. R. "Signifying Significant Significance." *American Psychologist*, Vol. 27, 1972, 774-775.
5. Broad, C. D. *Religion, Philosophy and Psychical Research*. New York: Harcourt, Brace & Co., 1953.
6. Brown, G. S. "Statistical Significance in Psychical Research." *Nature*, Vol. 172, 1953, 154-156.
7. Dixon, N. *Subliminal Perception, the Nature of a Controversy*. New York: McGraw-Hill, 1971.
8. Green, E., and Green, A. "Regulating our Mind-Body Processes." *Fields within Fields*, No. 10, 1873-74, 16-24.
9. Honorton, C. "Automated Forced-Choice Precognition Tests with a 'Sensitive.'" *Journal of the American Society for Psychical Research*. Vol. 65, 1971, 476-481.
10. Honorton, C. "Error Some Place!" *Journal of Communication*, Vol. 25, 1975, 103-116.
11. Honorton, C. "Psi and Mental Imagery: Keeping Score on the Betts Scale." *Journal of the American Society for Psychical Research*, Vol. 69, 1975, 327-332.
12. Honorton, C. "Receiver-Optimization and Information Rate in ESP." Paper presented in the symposium, "The Application and Misapplication of Findings in Parapsychology," at the 141st Annual Meeting of the American Association for the Advancement of Science, New York City, January 27, 1975.
13. Honorton, C. "Psi Interactions and Internal Attention States." In B. B. Wolman, ed., *Handbook of Parapsychology*. New York: Van Nostrand Reinhold Co., 1977.
14. Honorton, C., and Barksdale, W. "PK Performance with Waking Suggestions for Muscle Tension Versus Relaxation." *Journal of the American Society for Psychical Research*, Vol. 66, 1972, 208-214.

Honorton, C., Ramsey, M., and Cabibbo, C. "Experimenter Effects in Extrasensory Perception." *Journal of the American Society for Psychical Research*, Vol. 69, 1975, 135-150.

Honorton, C., and Ullman, M. "Comparison of Sensory and Extrasensory Influences on Dreams." Final Report prepared for the U.S. Public Health Service, National Institute of Mental Health (MH-21628), 1975.

Matas, F., and Pantas, L. "A PK Experiment Comparing Meditating Versus Nonmeditating Subjects." *Proceedings of the Parapsychological Association*, Vol. 8, 1971, 12-13.

Morris, R. L. "Tacit Communication and Experimental Theology." *Research in Parapsychology 1974*. Metuchen, N.J.: The Scarecrow Press, Inc., 1975, 179-198.

Price, G. R. "Science and the Supernatural." *Science*, Vol. 122, 1955, 359-367.

Price, G. R. "Apology to Rhine and Soal." *Science*, Vol. 175, 1972, 359.

Rhine, J. B. *et al. Extrasensory Perception after Sixty Years*. New York: Henry Holt, 1940.

Schmidt, H. "A PK Test with Electronic Equipment." *Journal of Parapsychology*, Vol. 34, 1970, 175-181.

Schmidt, H. "PK Tests with a High-Speed Random Number Generator." *Journal of Parapsychology*, Vol. 37, 1973, 105-118.

Schmidt, H. "Observation of Subconscious PK Effects with and without Time Displacement." *Research in Parapsychology 1974*. Metuchen, N.J.: The Scarecrow Press, Inc., 1975, 116-121.

Schmidt, H., and Pantas, L. "Psi Tests with Psychologically Equivalent Conditions and Internally Different Machines." *Proceedings of the Parapsychological Association*, Vol. 8, 1971, 49-51.

Smith, M., Tremmel, L., and Honorton, C. "A Comparison of Psi and Weak Sensory Influences on Ganzfeld Mentation." *Research in Parapsychology 1975*. Metuchen, N.J.: The Scarecrow Press, Inc., in press.

Stanford, R. G. "An Experimentally Testable Model for Spontaneous Psi Events. I. Extrasensory Events." *Journal of the American Society for Psychical Research*, Vol. 68, 1974, 34-57.

Stanford, R. G., Zenhausern, R., Taylor, A., and Dwyer, M. "Psychokinesis as Psi-Mediated Instrumental Response." *Journal of the American Society for Psychical Research*, Vol. 69, 1975, 127-134.

29. Sterling, T. C. "Publication Decisions and Their Possible Effects on Inferences Drawn from Tests of Significance—or Vice Versa." *Journal of the American Statistical Association*, Vol. 54, 1959, 30-34.
30. Wheeler, J. A. "Interview," *Intellectual Digest*, June 1973, 32.

GLOSSARY OF TERMS

The following glossary of terms used widely in parapsychology pears regularly in *The Journal of Parapsychology,* published arterly by the Foundation for Research on the Nature of Man, ollege Station, Durham, North Carolina 27708; it is reprinted re by permission.

GENT: The "sender" in tests for telepathy, the person whose mental states are to be apprehended by the percipient. In GESP tests, the person who looks at the target object.

T (Basic Technique): The clairvoyance technique in which each card is laid aside by the experimenter as it is called by the subject. The checkup is made at the end of the run.

ALL: The subject's guess (or cognitive response) in trying to identify the target in an ESP test.

HANCE: The complex of undefined causal factors irrelevant to the purpose at hand. *Mean Chance Expectation* (also *Chance Expectation* and *Chance Average*): The most likely score if only chance is involved.

HI-SQUARE: A sum of quantities, each of which is a deviation squared divided by an expected value. Also a sum of the squares of CR's.

LAIRVOYANCE: Extrasensory perception of objects or objective events.

R (Critical Ratio): A measure to determine whether or not the observed deviation is significantly greater than the expected random fluctuation about the average. The CR is obtained by dividing the observed deviation by the standard deviation. (The probability of a given CR may be obtained by consulting tables of the probability integral, such as Pearson's.)

R_d (Critical Ratio of the Difference): The observed difference between the average scores of two samples of data divided by the standard deviation of the difference.

EVIATION: The amount an observed number of hits or an average score varies (either above or below) from mean chance expectation of a run or series or other unit of trials.

IFFERENTIAL EFFECT: Significant difference between scoring rates when subjects are participating in an experiment in which two procedural conditions (such as two types of targets or two modes of response) are compared.

DISPLACEMENT: ESP responses to targets other than those for which the calls were intended.

Backward Displacement: ESP responses to targets preceding the intended targets. Displacement to the targets one, two, three, etc., places preceding the intended target are designated as (—1), (—2), (—3), etc.

Forward Displacement: ESP responses to targets coming later than the intended targets. Displacement to the targets one, two, three, etc., places after the intended target are designated as (+1), (+2), (+3), etc.

DT (Down Through): The clairvoyance technique in which the cards are called down through the pack before any are removed or checked.

ESP (Extrasensory Perception): Experience of, or response to, a target object, state, event, or influence without sensory contact.

ESP CARDS: Cards, each bearing one of the following five symbols: star, circle, square, cross, and waves (three parallel wavy lines). A standard pack has 25 cards.

Closed Pack: An ESP pack composed of five each of the five symbols.

Open Pack: An ESP pack made up of the ESP symbols selected in random order.

EXPECTATION: See *Chance*.

EXTRACHANCE: Not due to chance alone.

GESP (General Extrasensory Perception): ESP which could be either telepathy or clairvoyance or both.

MCE (Mean Chance Expectation): See *Chance*.

p (Probability): The fraction of times that in a great number of chance repetitions the observed result will be equalled or exceeded.

P (Probability): The number which the fraction of successes approaches in the limit with a sufficiently large succession of chance trials; e.g., in chance matchings with five targets, $P = 1/5$, or one success in five trials.

PARAPSYCHICAL (Parapsychological): Attributable to psi.

PARAPSYCHOLOGY: The branch of science that deals with psi communication, i.e., behavioral or personal exchanges with the environment which are extrasensorimotor—not dependent on the senses and muscles.

PERCIPIENT: The person experiencing ESP; also, one who is tested for ESP ability.

PK (Psychokinesis): The extramotor aspect of psi; a direct (i.e., mental but nonmuscular) influence exerted by the subject on an external physical process, condition, or object.

PLACEMENT TEST: A PK technique in which the aim of the subject is to try to influence falling objects to come to rest in a designated area of the throwing surface.

PRECOGNITION: Prediction of random future events the occurrence of which cannot be inferred from present knowledge.

EFERENTIAL MATCHING: A method of scoring responses o free material. A judge ranks the stimulus objects (usually ictures in sets of four) with respect to their similarity to, or ssociation with, each response; and/or he ranks the responses vith respect to their similarity to, or association with, each stimulus object.

: A general term to identify a person's extrasensorimotor communication with the environment. Psi includes ESP and PK.

-DIFFERENTIAL EFFECT: See *Differential Effect*.

-MISSING: Exercise of psi ability in a way that avoids the arget the subject is attempting to hit.

PHENOMENA: Occurrences which result from the operation of psi. They include the phenomena of both ESP (including precognition) and PK.

YCHICAL RESEARCH: Older term used for parapsychology.

N: A group of trials, usually the successive calling of a deck of 25 ESP cards or symbols. In PK tests, 24 single die-throws egardless of the number of dice thrown at the same time.

ORE: The number of hits made in any given unit of trials, usually a run.

otal score: Pooled scores of all runs.

Average score: Total score divided by number of runs.

(Standard Deviation): Usually the theoretical root mean square of the deviations. It is obtained from the formula $\sqrt{NPQ}$ n which N is the number of single trials, P the probability of success per trial, and Q the probability of failure.

RIES: Several runs of experimental sessions that are grouped n accordance with the stated purpose and design of the experiment.

T: A subdivision of the record page serving as a scoring unit for a consecutive group of trials, usually for the same target.

GNIFICANCE: A numerical result is significant when it equals or surpasses some criterion of degree of chance improbability. The criterion commonly used in parapsychology today is a probability value of .02 (odds of 50 to 1 against chance) or less, or a deviation in either direction such that the CR is 2.33 or greater. Odds of 20 to 1 (probability of .05) are regarded as strongly suggestive.

NGLES TEST: A PK technique in which the aim of the subject is to try to influence dice to fall with a specified face up.

ONTANEOUS PSI EXPERIENCE: Natural, unplanned occurrence of an event or experience that seems to involve parapsychical ability.

M (Screened Touch Matching): An ESP card-testing technique n which the subject indicates in each trial (by pointing to one of five key positions) what he thinks the top card is in the inverted pack held by the experimenter behind a screen. The card s then laid opposite that position.

BJECT: The person who is tested in an experiment.

TARGET: In ESP tests, the objective or mental events to which the subject is attempting to respond; in PK tests, the objective process or object which the subject tries to influence (such as the face or location of a die).

Target Card: The card which the percipient is attempting to identify or otherwise indicate a knowledge of.

Target Face: The face of the falling die which the subject tries to make turn up by PK.

Target Pack: The pack of cards the order of which the subject is attempting to identify.

TELEPATHY: Extrasensory perception of the mental state or activity of another person.

TRIAL: In ESP tests, a single attempt to identify a target object; in PK tests, a single unit of effect to be measured in the evaluation of results.

VARIANCE, THEORETICAL: A measure of the dispersal of a group of scores about their theoretical mean (see *MCE*, or *Mean Chance Expectation*).

High Variance: Fluctuation of scores beyond mean chance variance.

Low Variance: Fluctuation of scores below mean chance variance.

Mean Variance (theoretical): The expected variance of the theoretical mean score.

Run-Score Variance: The fluctuation of the scores of individual runs around the theoretical mean.

Subject Variance: The fluctuation of a subject's total score from the theoretical mean of his series.

Variance-Differential Effect: Significant difference between variances of run scores (or other units) in two experimental series designed to affect results differentially.

ADDITIONAL READING

The following reading list, drawn up by Ms. Rhea White, ector of Information of the American Society for Psychical search, New York, New York, is distributed by that society's ucation Department. Ms. White is co-editor, with Mrs. Laura Dale, of *Parapsychology: Sources of Information* (1973), a eral reference volume in the field. Readers of this volume may o wish to consult two related anthologies: *Parapsychology: Its ation to Physics, Biology, Psychology, and Psychiatry*, edited Gertrude R. Schmeidler (Metuchen, N. J., 1976), and *Hand-* *k of Parapsychology*, edited by Benjamin B. Wolman; Laura Dale, Gertrude R. Schmeidler, Montague Ullman, associate ors (New York, 1978).

Basic References

on, M. *Test Your ESP*. New York: New American Library, 1.

ywood, R. *The Infinite Hive*. London: Pan Books, 1966.

—— *The Sixth Sense*. London: Pan Books, 1971.

Connell, R. *ESP Curriculum Guide*. New York: Simon and uster, 1971.

rphy, G. with Dale, L. A. *Challenge of Psychical Research*. w York: Harper-Colophon, 1970.

tt, J. G. *ESP Research Today*. Metuchen, New Jersey: Scare- w, 1973.

ne, J. B. *Extra-Sensory Perception*, rev. ed. Boston: Branden, 3.

—— and Pratt, J. G. *Parapsychology*, rev. ed. Springfield, Illi- s: Thomas, 1962.

ne, L. E. *ESP in Life and Lab*. New York: Collier-Macmillan, 9.

—— *Hidden Channels of the Mind*. New York: Apollo, 1975.

—— *Mind over Matter*. New York: Collier, 1972.

—— *PSI: What Is It?* New York: Harper & Row, 1975.

—— *Manual for Introductory Experiments in Parapsychology*. rham, North Carolina: Parapsychology Press, 1966.

go, D. S. *Parapsychology—A Century of Inquiry*. New York: plinger, 1975.

l, W. G. *The Poltergeist*. New York: New American Library, 3.

meidler, G. *Extrasensory Perception*. New York: Atherton, 9.

Sinclair, U. *Mental Radio*. New York: Macmillan, 1971.
Ullman, M., and Krippner, S., with Vaughan, A. *Dream Telepathy*. New York: Macmillan, 1973.
Van Over, R. *Psychology and Extrasensory Perception*. New York: New American Library, 1972.
White, R. A. and Dale L. *Parapsychology: Sources of Information*. Metuchen, New Jersey: Scarecrow, 1973. An annotated bibliography of 282 of the best books on parapsychology.

Altered States of Consciousness

Barber, T. X. *LSD, Marihuana, Yoga and Hypnosis*. Chicago: Aldine, 1970.
Dingwall, E. J. (ed.). *Abnormal Hypnotic Phenomena*. New York: Barnes & Noble, 1968.
Green, C. *Lucid Dreams*. Oxford, England: Institute of Psychophysical Research, 1968.
Ornstein, R. *Psychology of Consciousness*. New York: Viking, 1973.
Ornstein, R. (ed.). *Nature of Human Consciousness*. New York: Viking, 1973.
Proceedings of an International Conference on Hypnosis, Drugs, Dreams and Psi: *Psi and Altered States of Consciousness*. (R. Cavanna and M. Ullman, eds.) New York: Parapsychology Foundation, 1968.
Proceedings of an International Conference on Methodology in Psi Research: *Psi Favorable States of Consciousness*. (R. Cavanna, ed.) New York: Parapsychology Foundation, 1968.
Tart, C. T. (ed.). *Altered States of Consciousness*. New York: Wiley, 1969.
Tart, C. T. *On Being Stoned*. Palo Alto: Science & Behavior Books, 1971.
White, J. (ed.). *The Highest State of Consciousness*. Garden City, New York: Doubleday, 1972.

Criticisms

Hall, T. H. *New Light on Old Ghosts*. Hollywood-by-the-Sea, Florida: Trans-Atlantic, 1965.
Hall, T. H. *The Spiritualists*. New York: Garrett/Helix, 1963.
Hansel, C. E. M. *ESP: A Scientific Evaluation*. New York: Scribner's, 1966.
Rawcliffe, D. H. *Occult and Supernatural Phenomena*. New York: Dover, 1971.

Experimental Psi Phenomena

on, M. *Test Your ESP.* New York: New American Library, 71.

att, J. C., and others. *Extrasensory Perception after Sixty ears.* Boston: Humphries, 1966.

o, K. R. *Experimental Parapsychology.* Springfield, Illinois: homas, 1966.

hine, J. B. *Extra-Sensory Perception,* rev. ed. Boston: Hum- ries, 1964.

hine, J. B. (ed.). *Progress in Parapsychology.* Durham, North arolina: Parapsychology Press, 1971.

hine, J. B., and Brier, R. (eds.). *Parapsychology Today.* New ork: Citadel, 1968.

hine, J. B., and Pratt, J. G. *Parapsychology,* rev. ed. Springfield, inois: Thomas, 1962.

hine, L. E. *Mind over Matter.* New York: Macmillan, 1970.

hmeidler, G. (ed.). *Extrasensory Perception.* New York: Ather- n, 1969.

hmeidler, G., and McConnell, R. A. *ESP and Personality Pat- rns.* Westport, Connecticut: Greenwood, 1973.

nclair, U. *Mental Radio,* rev. 2nd printing. (With a report by W. Prince.) Springfield, Illinois: Thomas, 1962.

houless, R. H. *From Anecdote to Experiment in Psychical esearch.* London and New York: Routledge, 1972.

llman, M., and Krippner, S. *Dream Studies and Telepathy.* New ork: Parapsychology Foundation, 1970.

llman, M., and Krippner, S. (with A. Vaughan.). *Dream Tele- thy.* New York: Macmillan, 1973.

General Surveys

ngoff, A., and Shapin, B. (eds.). *Parapsychology and the ciences.* New York: Parapsychology Foundation, 1974.

eloff, J. *New Directions in Parapsychology.* New York: Interna- onal Publications Service, 1974.

road, C. D. *Lectures on Psychical Research.* New York: Hu- anities, 1962.

ba Foundation. *Extrasensory Perception.* (G. E. Wolstenholme nd E. Millar, eds.) New York: Citadel, 1966.

dmunds, S. *Miracles of the Mind.* Springfield, Illinois: Thomas, 965.

hnson, R. C. *Psychical Research.* New York: Funk and Wag- alls, n.d.

Knight, D. C. (ed.). *The ESP Reader*. New York: Grosset & Dunlap, 1969.

Murphy, G. (with L. A. Dale). *Challenge of Psychical Research*. New York: Harper & Row, 1961.

Pierce, H. W. *Science Looks at ESP*. New York: New American Library, 1970.

Pratt, J. G. *ESP Research Today*. Metuchen, New Jersey: Scarecrow, 1973.

Pratt, J. G. *Parapsychology*. New York: Dutton, 1966.

Rhine, L. E. *ESP in Life and Lab*. New York: Macmillan, 1967.

Smythies, J. R. (ed.). *Science and ESP*. New York: Humanities, 1967.

West, D. J. *Psychical Research Today*. London: Duckworth, 1954.

Histories and Historical Works

Brown, S. *The Heyday of Spiritualism*. New York: Hawthorn, 1970.

Ebon, M. *They Knew the Unknown*. New York: World, 1971.

Gauld, A. *The Founders of Psychical Research*. New York: Schocken, 1968.

McHargue, G. *Facts, Frauds and Phantasms*. Garden City, New York: Doubleday, 1972.

Murphy, G., and Ballou, R. (eds.). *William James on Psychical Research*. New York: Viking, 1969.

Nelson, G. K. *Spiritualism and Society*. New York: Schocken, 1969.

Podmore, F. *Mediums of the 19th Century*. New Hyde Park, New York: University Books, 1963.

Somerlott, R. *"Here, Mr. Splitfoot."* New York: Viking, 1971.

Van Over, R., and Oteri, L. (eds.). *William McDougall, Explorer of the Mind*. New York: Garrett/Helix, 1967.

Mediums and Sensitives

Angoff, A. *Eileen Garrett and the World Beyond the Senses*. New York: Morrow, 1974.

Cummins, G. *Swan on a Black Sea*. New York: Weiser, 1970.

Eisenbud, J. *The World of Ted Serios*. New York: Morrow, 1967.

Feilding, E. *Sittings with Eusapia Palladino and Other Studies*. New Hyde Park, New York: University Books, 1963.

Garrett, E. J. *Many Voices*. New York: Putnam's, 1968.

LeShan, L. *The Medium, the Mystic, and the Physicist*. New York: Viking, 1974.

Litvag, I. *Singer in the Shadows*. New York: Macmillan, 1972.

edhurst, R. *Crookes and the Spirit World*. New York: Taplin-
r, 1972.

ith, S. *Mediumship of Mrs. Leonard*. New Hyde Park, New
ork: University Books, 1964.

etze, T. *Margery*. New York: Harper and Row, 1973.

Philosophy, Psychiatry, Religion, and Psychical Research

oad, C. D. *Religion, Philosophy and Psychical Research*. New
ork: Humanities, 1969.

evereux, G. (ed.). *Psychoanalysis and the Occult*. New York:
ternational Universities Press, 1971.

isenbud, J. *Psi and Psychoanalysis*. New York: Grune & Strat-
n, 1970.

ardy, A. *The Living Stream*. New York: Harper & Row, 1967.

eShan, L. *Toward a General Theory of the Paranormal*. New
ork: Parapsychology Foundation, 1969.

cCreery, C. *Science, Philosophy and ESP*. Hamden, Connecti-
t: Archon, 1967.

eff, H. R. *Psychic Phenomena and Religion*. Philadelphia: West-
inister, 1971.

an Over, R. (ed.). *Psychology and Extrasensory Perception*.
ew York: New American Library, 1972.

Spontaneous Psi Experiences

rookall, R. *The Study and Practice of Astral Projection*. New
yde Park, New York: University Books, 1966.

ox, O. *Astral Projection*. New Hyde Park, New York: Univer-
ty Books, 1963.

reen, C. *Out-of-the-Body Experiences*. New York: Ballantine,
974 (c. 1968).

eywood, R. *ESP: A Personal Memoir*. New York: Dutton,
964.

acKenzie, A. *Apparitions and Ghosts*. London: Barker, 1971.

acKenzie, A. *Frontiers of the Unknown*. London: Barker, 1968.

acKenzie, A. *The Unexplained*. New York: Abelard, 1968.

onroe, R. A. *Journeys Out of the Body*. Garden City, New
ork: Doubleday, 1971.

wen, A. R. G. *Can We Explain the Poltergeist?* New York:
arrett/Helix, 1964.

rince, W. F. *Noted Witnesses for Psychic Occurrences*. New
yde Park, New York: University Books, 1963.

oll, W. G. *The Poltergeist*. New York: New American Library,
973.

Stevenson, I. *Telepathic Impressions.* Charlottesville: University Press of Virginia, 1970.
Tyrell, G. N. M. *Apparitions*, rev. ed. London: Duckworth, 1953.

Survival

Beard, P. *Survival of Death.* London: Psychic Press. 1966.
Ducasse, C. J. *A Critical Examination of the Belief in a Life after Death.* Springfield, Illinois: Thomas, 1961.
Ducasse, C. J. *Paranormal Phenomena, Science, and Life after Death.* New York: Parapsychology Foundation, 1969.
Jacobsen, Nils O. *Life Without Death?* New York: Delacorte, 1974.
Murphy, G. *Three Papers on the Survival Problem.* (Reprinted from JASPR, 1945.) New York: ASPR, 1969.
Myers, F. W. H. *Human Personality and its Survival of Bodily Death.* (Abridged and ed. by S. Smith.) New Hyde Park, New York: University Books, 1961.
Osis, K. *Deathbed Observations by Physicians and Nurses.* New York: Parapsychology Foundation, 1961.
Stevenson, I. *Twenty Cases Suggestive of Reincarnation,* 2nd rev. ed. Charlottesville: University Press of Virginia, 1974.

Unorthodox Healing

Hammond, S. *We Are All Healers.* New York: Harper & Row, 1965.
Podmore, F. *From Mesmer to Christian Science.* New Hyde Park, New York: University Books, 1965.
Rose, L. *Faith Healing.* Baltimore: Penguin, 1971.
Weatherhead, L. *Psychology, Religion and Healing,* rev. ed. New York: Abingdon, 1954.
West, D. J. *Eleven Lourdes Miracles.* New York: Garrett/Helix, 1957.
Worrall, A. (with O. Worrall). *The Gift of Healing.* New York: Harper & Row, 1965.

Reference

Cavendish, R. (ed.) *Encyclopedia of the Unexplained.* New York: McGraw-Hill, 1974.
Research in Parapsychology. (Formerly *Proceedings of the Parapsychological Association.*) Published annually. Metuchen, New Jersey: Scarecrow Press.
White, R. A., and Dale, L. A. *Parapsychology: Sources of Information.* Metuchen, New Jersey: Scarecrow Press, 1973.

ABOUT THE EDITOR

Martin Ebon is an authority on a wide variety of topics in
: fields of social and political science. His articles and re-
ws have been published in periodicals ranging from *Human*
havior, The Psychiatric Quarterly, and *Contemporary Psy-*
logy to magazines such as *The Saturday Review, The Hu-*
nist, and *The Naval Institute Proceedings*. Mr. Ebon served
many years as Administrative Secretary of the Parapsy-
ology Foundation and subsequently as a consultant to the
undation for Research on the Nature of Man.

Martin Ebon has authored numerous books for New Ameri-
n Library. Among the most recent are THE CLONING OF
AN: Brave New Hope—or Horror?, THE SIGNET HAND-
OK OF PARAPSYCHOLOGY and DEMON CHILDREN.
r. Ebon divides his time between his homes in New York
d Athens, Greece.

20/8/87
20541

Recommended SIGNET Reading

☐ **THE WORLD'S WEIRDEST CULTS edited by Martin Ebon.** From around the world from the earliest dealings with the forces of evil to the terrible tragedy of the Jonestown death cult, here is a shocking but true look at the various strange beliefs which have flourished in the past and the bizarre groups which are still actively recruiting members today. (#J8767—$1.95)*

☐ **MYSTERIOUS PYRAMID POWER edited by Martin Ebon.** A message left by the gods? The storehouse of earth's past and future history? Or a mechanism for concentrating unseen psychic energies? This book explores it all, turning the key that could open the door to the storehouse of ancient knowledge and power which has long been lost in the mists of legend. (#E8110—$1.75)

☐ **THE RIDDLE OF THE BERMUDA TRIANGLE edited by Martin Ebon.** The mysterious saga of the forbidden waters they call the "Devil's Sea". Thousands of people have been lost there, hundreds of ships and planes have disappeared never to be heard from again. Why? Where to? How? Now at last a book unravels the mystery of these deadly waters to reveal the complete, sometimes startling, always frightening saga of *The Riddle of the Bermuda Triangle*. (#E8063—$1.75)

☐ **THE EVIDENCE FOR LIFE AFTER DEATH edited by Martin Ebon.** All the latest scientific information drawn from the experiences of people who have been pronounced clinically dead only to be miraculously revived, the case histories of astral projection, and the reports of witnesses who have observed spirit manifestations. (#W7543—$1.50)

* Price slightly higher in Canada

Buy them at your local bookstore or use this convenient coupon for ordering.

THE NEW AMERICAN LIBRARY, INC.
P.O. Box 999, Bergenfield, New Jersey 07621

Please send me the SIGNET BOOKS I have checked above. I am enclosing $________________(please add 50¢ to this order to cover postage and handling). Send check or money order—no cash or C.O.D.'s. Prices and numbers are subject to change without notice.

Name ____________________________

Address ____________________________

City______________ State__________ Zip Code__________

Allow 4-6 weeks for delivery.
This offer is subject to withdrawal without notice.

IGNET Books of Special Interest

☐ **DEMON CHILDREN edited by Martin Ebon.** Terrifying but true case histories of children suddenly transformed by demonic forces into creatures of evil, documented by leading psychic investigators. Stories range from the original incident on which *The Exorcist* was based to the tragedy of a young child enslaved by a Tahitian god. (#E7986—$1.75)

☐ **THE WORLD ALMANAC BOOK OF THE STRANGE.** The most comprehensive exploration of the world of the mysterious, the bizarre, and the undeniably extraordinary. Includes pyramid power, the Loch Ness Monster, experiments with ESP, UFOs, and much, much more. (#E7784—$2.50)

☐ **ADVENTURES INTO THE PSYCHIC by Jess Stearn.** A fully documented account of every major aspect of the occult field today, it takes the reader through a series of psychic experiences, ranging from ESP, seances, and telepathic crime detection. (#J9376—$1.95)

☐ **THE SUPERNATURAL by Douglas Hill and Pat Williams.** Two knowledgeable authorities, both of them journalists, lead an excursion into the realms of the unknown, presenting astonishing facts about witches and vampires, ghosts and poltergeists, grotesque cults and orgiastic rituals. (#J9265—$1.95)

☐ **ALIENS FROM SPACE . . . THE REAL STORY OF UNIDENTIFIED FLYING OBJECTS by Major Donald E. Keyhoe (USMC Ret.).** From secret Washington archives, eyewitness testimonies and official scientific findings, new astounding evidence about Von Daniken's ancient astronauts and their landings on Earth today! (#J8968—$1.95)*

☐ **WE ARE NOT ALONE by Walter Sullivan.** Winner of the 1965 International Nonfiction Prize, this is a comprehensive account of the search for intelligent life on other worlds, by the Science Editor of *The New York Times.* (#J8168—$1.95)

* Price slightly higher in Canada

Buy them at your local
bookstore or use coupon
on next page for ordering.

[illegible]
20541

SIGNET Books You'll Enjoy

☐ **MANY MANSIONS by Gina Cerminara.** The most convincing proof of reincarnation and ESP ever gathered in one volume. A trained psychologist's examination of the files and case histories of Edgar Cayce, the greatest psychic of our time. (#E9290—$2.25)

☐ **THE COMPLETE BOOK OF MAGIC AND WITCHCRAFT by Kathryn Paulsen.** A thorough depiction of specific rites, recipes for potions, a glossary of terms, and a vivid history of magic make this work invaluable reading for anyone interested in magic and the occult. (#E9180—$1.75)

☐ **ADVENTURES INTO THE PSYCHIC by Jess Stearn.** A fully documented account of every major aspect of the occult field today, it takes the reader through a series of psychic experiences, including ESP, seances, and telepathic crime detection. (#J9376—$1.95)

☐ **KATHRYN KUHLMAN: The Woman Who Believes in Miracles by Allen Spraggett.** In this inspiring story of the greatest faith healer since Biblical times, Allen Spraggett gives a number of indisputable case histories of the cures that Kathryn Kuhlman has effected. (#W8529—$1.50)

☐ **SASQUATCH by Don Hunter with René Dahinden.** Bigfoot, the Abominable Snowman—an ancient myth . . . or the "missing link" in man's evolution? With eight pages of astonishing photos, including frames from the famous Bluff Creek film. (#J9186—$1.95)

Buy them at your local bookstore or use this convenient coupon for ordering.

THE NEW AMERICAN LIBRARY, INC.,
P.O. Box 999, Bergenfield, New Jersey 07621

Please send me the SIGNET BOOKS I have checked above. I am enclosing $__________ (please add 50¢ to this order to cover postage and handling). Send check or money order—no cash or C.O.D.'s. Prices and numbers are subject to change without notice.

Name ______________________________

Address ______________________________

City______________ State__________ Zip Code__________

Allow 4-6 weeks for delivery.
This offer is subject to withdrawal without notice.

Parapsychology—

THE SCIENCE OF THE FUTURE!

What is parapsychology and why is there so much debate about it, both in the scientific community and among believers in the occult? Now, offering conclusive evidence based on the writings and experiments of noted experts in fields ranging from religion to psychology, Martin Ebon answers these questions and establishes once and for all the importance of the study of psychic phenomena. The result is the most comprehensive guide to the always fascinating and often astounding science of parapsychology, complete with the latest discoveries about:

Out-of-the-body experiences
•
Poltergeists
•
Dreams and precognition
•
Survival after death
•
Mental telepathy
•
And much, much more

ಗ್ರಂಥಾಲಯ
20487
ಬೆಂಗಳೂರು-19

NEW AMERICAN LIBRARY PUBLISHES SIGNET, MENTOR, CLASSIC, PLUME, MERIDIAN & NAL BOOKS